THE SCHOOL OF TO-MORROW

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The School of To-morrow

THE SCHOOL OF TO-MORROW

A COLLECTION OF
PRIZE ESSAYS FROM
THE WORLD'S WORK

GARDEN CITY NEW YORK
DOUBLEDAY, PAGE & COMPANY
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INTRODUCTION

THE EDUCATIONAL REVOLUTIONISTS

BY WALTER H. PAGE

Editor of The World's Work

THE essays in this volume show no longer merely the revolt against the traditional matter and method of education but constructive efforts at training with other kinds of matter and with other methods. For mere criticism or complaint is passed. If the old education be outworn, it is time to make a new education, and these essays are constructive efforts in that direction. Speculation and timidity, too, are passed. These writers have the courage of their convictions; and the school of to-day is a very different thing from the school of yesterday.

To a layman the change seems good, very good. The old humdrum drill in subjects that had little relation to the lives of the pupils was in the main for most of them misdirected energy. "To save my soul I can't prove that the 'mental discipline' of

a Latin grammar was any better than the mental discipline of a carpenter's bench — under a competent instructor." I am quoting from a conversation with one of the most famous of our old-time school-masters. "And," he went on to say, "for nine tenths of the boys and girls in the world what they will learn at a carpenter's bench will serve them a better turn than what they might learn from a Latin grammar."

The one fear is that the revolutionists of this new educational era may themselves in turn become dogmatic and, therefore, narrow. For, as soon as a system (any system, even the best system in the world) begins to seem satisfactory, the system itself is expected to work results. That was the chief trouble with the "old" education. To put a boy or a girl through a certain routine was regarded as educating them. The truth, of course, was and is that training is good or bad chiefly in proportion to the skill of the trainer.

In all the discussion of education that has filled our American world with noise these recent years — discussion of matter and discussion of method — less has been said and written about the quality of teaching

than about any other important part of the subject. Yet everybody knows that more depends on the teacher than on the subject. If a great teacher can do more to educate a boy at a carpenter's bench than a commonplace teacher can do with a Latin grammar, the reverse also is true: a great teacher can do more to educate a boy with a Latin grammar than a commonplace teacher can do with a carpenter's bench. Those who make great changes incur great obligations. The first duty laid on the "revolutionists," then, is to make sure that they put a better quality of teachers in the schools than the schools of yesterday had.

There is good reason for the hope that they can. For teaching after the old method was not a very interesting occupation except to the few who were born with an especial aptitude for it. Most teachers went round the same circle year after year. The system did not often force them to do more and it permitted them to do their work mechanically. Thus the profession became a refuge for routine minds.

But the more practical turn of education is making it intrinsically a more interesting occupation. There is less going around the

same circle, a greater chance and even a necessity for inventiveness, for variety, for adaptability to changing conditions. The school-master's work becomes more interesting and more original as he depends less on books. This gain in the intrinsic interest of the work makes the "new" school more interesting not only to the pupil but to the teacher also; and this increased interest in turn is bringing into the profession a larger number of capable and enthusiastic persons. The more interesting the work, the better the workers that it attracts.

And the "practical" school-men have the thanks of laymen for checking the tendency toward an unintelligible educational professionalism. A little while ago men of other professions found "educators" becoming persons of a mysterious cult — in fact, of many cults and schools. They seemed to be giving more thought to elaborated systems than to the plain business of teaching. Now the "new" plan does not forget the pupil, who, after all, is the person for whom education is carried on — a fact that has sometimes seemed to escape proper emphasis. These revolutionists, then, deserve the success they are winning because they strip

the problem of its old-time mystery and complexity and reduce it to a direct effort to train the young. Even if some of their efforts should go wrong, they at least keep to the main business.

The turning of school-life in the direction of the work that awaits the pupil in after-school years; the training of the mind to logical processes and to swift action by exercise in "practical" things; awakening the pupil's interest by giving him tasks whereby he may achieve visible results — these are the main items in the new educational creed; and it is a sound creed as well as useful and interesting and practical. But it is not a complete educational creed.

To complete it there must be added the furnishing of the mind, for a strong and empty mind is no better for the higher uses of life than a strong and empty house for comfortable living. An idea of the proper correlation of the great departments of human achievement and of human experience and of human knowledge, a right value of the gifts of the past to the present, some glimpse, in proper perspective, of the marching armies of thought and action and

of their leaders and of their conquests and of their purposes and problems — these are necessary to give an horizon to life and a sky-line to the world. Else your "new" pupil, however well he may succeed by his efficiency, will nevertheless make a barren and dull business of living.

But the furnishing of the mind, as I understand these educational revolutionists, is not to be forgotten in their new order of training; and, with this, they have a right to their high hopes of to-morrow.

The Boy of To-morrow

THE BOY OF TO-MORROW

WHAT THE SCHOOL WILL DO FOR HIM

The first prize in the World's Work educational contest

BY ARTHUR D. DEAN

(CHIEF OF THE DIVISION OF TRADE SCHOOLS IN THE NEW YORK STATE EDUCATION DEPARTMENT)

MY FATHER sent me to a school of yesterday so much that I very nearly missed an education. It was this way: he had labored so hard to obtain what he called "an education" that he was afraid I would be missing one if by any possible chance there was any let-up on the books. Somehow he forgot that his splendid health, his sanity of vision, his capacity for work, and his wholesome attitude toward life resulted from a contact with other educational forces than the schoolhouse, and that the very hardships of his boyhood constituted in themselves an educative process.

He held two degrees — M. C. (master of character) and M. I. (master of industry) — from what was then the largest fitting school

in the land — the University of Hard Knocks. I suspect that it had a curriculum unrivaled by the schools which I attended. It began in a good New England home, managed by thrifty and sterling parentage. Its course in farm chores had plenty of exercises and contact with Nature. Its spelling bees, husking parties, and church suppers furnished wholesome recreation. In fact, my father had in one way or another all the essentials of the school of to-morrow—physical and moral training, vocational education and direction, contact with Nature, and directive recreation.

The school of "day before yesterday" did its part in making him, in the best sense of the word, an educated man in that his few months of attendance were sufficient to supplement his nine months of actual doing.

Predigested education and printer's ink will not produce successful and virile men. When a mother waits on her boy, prides herself that he is to be a "gentleman," and urges the self-made father to hire a gardener to mow the small lawn and trim the bushes in order that her boy may have time to loaf physically or to browse intellectually, she little realizes that she is doing the very

things that may prevent him from following in the footsteps of that husband of whom she is so justly proud. She fails to grasp that habits of order, industry, obedience, and right thinking can come only out of practice and that thought is only valuable as it is nslated into action.

In the school of to-morrow it will be boys more than books, and living more than letters. It will make for the health of the body — fresh air, wholesome food, adequate exercise, and manly work; it will make for the health of the mind — sanity, alertness, and reliability; it will make for the health of the spirit — habits of social justice and expressions of divine truth. Furthermore, it will direct its youth into the paths of industrial efficiency and world service.

I am thinking of the whole boy of to-morrow and all that makes for his human wealth, and the unfolding and perfecting of his human spirit are not to be discussed in terms of any single pet theory; neither shall I attempt to square my opinion with all the prevailing theories of education. Somewhere I must draw the line or else the outcome will be like that of the chameleon owned by a politician. This man had a pet

chameleon with which he entertained his friends. At last it was gone and a friend inquired for it. "Well, you see," said the owner, "I used to put him on brown and he was brown, on green and he was green, on drab and he was drab; but one day I put him on Scotch plaid and he just wore himself out trying to make good."

The school of to-morrow will have over its door, "We conserve the whole boy." The watchword of the school of yesterday has been, "We preserve the entire course of study." Those who managed the schools of yesterday thought that children were created for the exemplification of the curriculum. In the schools of to-morrow the controlling motive will be that the curriculum is arranged to serve the needs of the pupils. In place of machine operatives in the factory of instruction we shall have teachers who believe that they are rendering the right service when they teach boys and not merely subjects. I inquired once of a group of teachers what they taught. One said mathematics; another replied English; still another science; but the fourth — God bless the little prophetess — merely said, "Please sir, just boys."

In the days of to-morrow the boys had somehow become the all-important thing in school. Perhaps the school men took their cue from the Department of Agriculture, which had been doing very effective work in increasing the capacity of horses, hogs, and hens. Very probably the change in attitude was due to the people themselves, who came to realize that the greatest resource in the world was human wealth, and that they ought to take as much interest in the welfare of boys, their health, their disposition, and their productive efficiency as they had been taking in the construction of barns and hen coops, in the study of alfalfa, and in the development of dairy cows.

Quite recently I happened to be in a town in New York where a herd of cows was attacked by a contagious disease. The owner telegraphed to Secretary Wilson (who said the other day that he had three thousand experts in animal and plant diseases), and the reply was: "Certainly. I will send you a man right away." Sure enough, the man came. He brought his degree of D.V.S., a government syringe, and a bottle of government medicine; he treated the cows and they got well.

Now it was not cranky for the Government to do this, and it could afford the expense, too, for the cows meant milk, butter, and beef.

The schools of to-morrow will think that they can afford to look after the health of children by providing baths, gymnasiums, swimming pools, and play-grounds. They will elect on their faculties the sun, fresh air, the lakes, and the fields. Moreover they will believe it possible and wise to make specific preparation to increase, through vocational training, the productive capacity of the world's future workers. So it came about that the people enlarged their point of view from the rather materialistic one of "be a cow and be worth saving" to the more human one of "be a boy and be worth conserving."

In the days of yesterday discerning ones saw that there was danger of our becoming the best schooled but the most poorly educated people in the world. They were opposed by those who took special delight in decrying everything which had not been traditionalized by the customs of the Middle Ages.

I shall never forget a district school meet-

ing when the question of appropriating two thousand dollars for a course in agriculture was before the townspeople. After the school official had explained the details an irate taxpayer arose and said: "We don't want no greenhouses and shovels in our schools. What do we want of such dickerings? We want our boys to know their books. What we want is more education."

So completely did I forget myself that I shouted "Amen!" to his last statement. I owe him much for the train of thought which he started. We do want more education and the school of to-morrow will bring it to the boy of to-morrow. But the word education is a far broader word then the irate taxpayer meant.

We must look at the whole boy and the educative process in its entity. I shall not attempt to stretch this school of to-morrow upon the dissecting table, for the moment I do I shall find it is already dead. True education is a unitary process and there are no mathematically accurate subdivisions. Its constituent parts are interesting and significant, but if they are cut out of the whole we shall find that they have ceased to live.

Neither will I ask you to admire the machinery of instruction, the buildings, the laboratories, and the courses. I am afraid I shall ignore that supposedly all-important matter of having pupils "cover the subject." I have taught enough to know that I not only covered the subject but also the boys. I shall not try to interest you in the rather unworthy task of having children learn with much worry and vexation of matters not of first-rate importance and which might easily be learned later in life should they ever be wanted.

I simply propose to have you think of sound, healthy, accomplished, and lovable boys and how the school is going to do its share toward getting them.

To accomplish this end I would have the school of to-morrow do everything toward making sound and vigorous health a necessary end. I would have it offer every provision for the cultivation of all the senses. I would have it build up that great source or power, the emotional life. I would even go so far as to have it make each moment of its life an end in itself, to be made beautiful and glorious in and for itself and not merely a jumping-off place for another and higher school.

In short, I would look squarely at life itself and see what the day after to-morrow requires of its citizen-to-be, and I would centre my energy and his energy upon the mastery of these things — health, character, interest in and capacity for service, appreciation of the beautiful and true, and such details of theories, facts, and past accomplishments as will make possible the development of human efficiency.

There will be no question of the primary importance of good health as the first requisite for efficiency. Its absence in the school of to-morrow will be counted as a moral delinquency, and it will be recorded on the report card, if there is one, long before the teacher even thinks of the boy's failure in cube root. Only yesterday my neighbor said: "I must take Charlie out of school, he does not seem very well." With the dawn of a new era the parent will say, "Charlie has not been very well; he seems to be pale and sickly. I must send him to school more regularly, for that is the place where they keep him well."

Among the ironies of the school of yesterday was the purely theoretical use which was made of the study of physiology and

hygiene. If the human body in those days was anything like the courses in these subjects, then most certainly it was fearfully and wonderfully made. They centred largely around the use of alcoholic liquor and narcotics. To smoke on earth was equivalent to smoking hereafter, and the descriptions of the deadly character of all alcoholic drinks reminded one of patent medicine advertisements. The teacher appeared before the class with a bottle of alcohol and a glass containing the white of an egg. He said: "Children, I will now pour some alcohol into the glass. You will see that the egg coagulates. Now, the lining of your stomach is like the white of an egg and alcohol acts on it as it does on this egg." He did not add that the alcohol was 95 per cent. pure.

I have absolutely no desire to minimize the importance of sane teaching on the evils resulting from the use of cigarettes and intoxicating liquor. But there are larger questions involved in the study of physiology and hygiene. Sound health is basic. Character and productive efficiency rest upon it.

The school of yesterday taught the names of the bones of the body to a boy that had gulped down a cup of coffee and a doughnut

before coming to school, and then asked him to study improper fractions. At recess it turned him out into a brick-covered school yard or down into an ill-smelling basement, with the opportunity of purchasing a fried pie or a sugared doughnut for his lunch. Meanwhile it ignored his adenoids, enlarged tonsils, decaying teeth, imperfect eyesight, and poorly nourished body. It spent $200 instructing a boy who was defective in hearing or eyesight, when ten cents spent on medical inspection would have made apparent why he sat with a gaping mouth or head buried in a book.

The boy of yesterday was taught the "fundamentals" (God save the word as then used) and to chance or a Divine Providence was left the most important fundamental of them all — a boy's rightful heritage to a sound body. The school thought that it did its duty when it taught the English branches. It left to the home or the street the more important things. It would have been better to have let the home teach the three R's and to have retained for itself such questions as the sort of food which would have given the best results in the way of nutrition and growth, the kind of baths, the

amount of sleep, and the sort of play which should have been encouraged. It should have realized that for a boy to know how to swim and how to resuscitate one who was overcome was more important than the binomial theorem.

I offer no excuse for placing such emphasis on the sound body of our boy of to-morrow. Any one who has patted the sun-tanned back of a sturdy lad just as he dives off the wharf at a summer camp, has heard his wholesome shout of joy when he comes up with the tightly clasped pebble, has seen him eat the simple, substantial, nourishing food at the pine table, has listened in the quiet of the twilight to those confidences which he is only too glad to give to those whom he loves, and has softly tiptoed to the tent and seen in the moonlight his deep and gentle breathing, knows whereof I speak. It is then that we see that the wealth of the world is human and that it consists of strong, virile boys who make the men of the morrow.

But to continue the discussion of the educative process. The school of yesterday served its courses *table d'hôte*, and the pupils in order to get to the dessert course had to take all the previous courses, and scarcely

one in ten got even to the meat course, to say nothing of those dainties which came last. The school of to-morrow will serve *à la carte*, with a menu adapted to boys who have varied interests, varied capacities, and varied desires, and who have varying personal opportunities for the full enjoyment of the privileges of education. It will recognize that there are many processes by which boys can be educated, and that one process will be best for one group and another process for a different group.

In this it will differ from the school of yesterday, which believed that all its boys should be able to do one thing as well as another, and if perchance a given boy showed an apparent aptitude for doing one thing, and an apparent inaptitude for doing other things, then time and effort were spent teaching him the things for which he had no aptitude.

The following shrewd and pointed bit of allegoric sarcasm, given some years ago by the late Professor Dolbear of Tufts College, strikingly tells the story of the utter foolishness of the uniform course of study. You may draw your own conclusions.

In antediluvian times, while the animal

kingdom was being differentiated in swimmers, climbers, runners, and fliers, there was a school started for their development. Its theory was that the best animals should be able to do one thing as well as another. If an animal had short legs and good wings attention should be devoted to running so as to even up the qualities as far as possible. So the duck was kept waddling instead of swimming, and the pelican was kept wagging his short wings in the attempt to fly. The eagle was made to run and allowed to fly only for recreation, while maturing tadpoles were unmercifully guyed for being neither one thing nor another.

The animals that would not submit to such training but persisted in developing the best gifts they had were dishonored and humiliated in many ways. They were stigmatized as being narrow-minded and specialists.

No one was allowed to graduate from the school unless he could climb, swim, run, and fly at certain prescribed rates; so it happened that the time wasted by the duck in the attempt to run had so hindered him from swimming that his swimming muscles had atrophied and he was hardly able to swim at all, and in addition he had been scolded,

punished, and ill-treated in many ways so as to make his life a burden. In fact, he left school humiliated. The eagle could make no headway in climbing to the top of a tree and, although he showed he could get there just the same, the performance was counted a demerit, since it had not been done according to the prescribed course of study.

An abnormal eel with large pectoral fins proved he could run, swim, climb trees, and fly a little. He attained an average of 60 per cent. in all studies. He was made valedictorian of the class.

The public schools of to-morrow will express their educative process through three great divisions — primary, advanced, and supplemental.

I call the first division primary, not because it is a "primary school," but rather because it is a school of primary importance. We are keeping in mind that the early years of boyhood, up to say fourteen years, are marked by tremendous physical activities and that the body and mind are extremely plastic and sensitive to environment and nothing is to stand in their way, not even the call of the factory or the traditions of educational monks.

Did you ever stop to think of that strange psychological condition in the school of yesterday — the school state of mind — and compare it with the attitude of mind of the same boy at play? In the latter instance you see a vivacious, inquisitive being seeking information everywhere as a pleasure. In the former you see him at school a weary, shrinking sort of creature, repeating with his lips some one else's thoughts in some one else's words.

The report card comes home and you begin to wonder. For only on last Sunday's outing he explained to you the workings of a trolley car, he asked about the formation of snowflakes, he described freely his yesterday's game of hockey, he had even ideas regarding the state senatorship fight; and you listened to him, and even encouraged the activities of his growing mind and body. Yet you have never claimed to be a school teacher. Your heart was simply wrapped up in your boy.

You may not have known that your pedagogy was that of the teacher of to-morrow, who believes and practises the scientific fact that it is quite impossible to get at the brain except through the avenues of the five

senses; who concerns himself with reaching the boy's brain through such activities as gymnastics, manual arts, music, and the spoken language; who thinks of education in terms or the three H's — head, heart, and hands — and not alone of the three R's.

Would you like to examine the day's programme of our little man of the school of to-morrow? He leaves the home well-nourished, for the school of to-morrow is in the city of to-morrow, where there are no half-fed children, because human society has seen to it that the science of distribution has been as well worked out as was the science of production of yesterday.

He enters the schoolroom, which is equipped with chairs and tables, and with plenty of free space, for his teachers know that activity is the call of nature. The day begins with music, and the teacher reads a lesson in which history and geography, interwoven with stories, are treated as literature. Then comes the period of gymnastics, with marching and singing, and ending with free play and its chance for spontaneous action. Then follows more reading, in which the boy does his part. You will notice that he reads well, and the secret lies in the fact that he is reading

something that appeals to him. Then comes the period of handwork. You will find that this work is not given in the cold and damp basement, for in the school of to-morrow this phase of organic education is deemed worthy of the best room in the building. Here he fashions and decorates his handwork, which involves some number work in the fundamental processes of arithmetic. On pleasant days there are excursions to the park, games in the school yard or on the roof garden, and outings to the river, to the lake, and to the woods.

Have I forgotten the formal lessons in arithmetic, geography, or grammar? Can our youngster tell the route of a sack of flour from Minneapolis to Bombay, via the Suez Canal, as the boy could in the school of yesterday? I trust no one will be horrified to find that our little man may know nothing of these things. He simply likes his teacher, his school, and his mates; he stands well on his feet, reads intelligently, and has an interest in the world of nature; he is well fed, alert in his mind, and ready and willing to obey.

The school day ends at four o'clock and our boy leaves the building without books, with hands free, and yet freer heart. Let

us expect that he goes to a good home and loving parents; that he has wholesome playmates; that he renders little services and helps about the house; that he has a nourishing and simple supper; that he goes to bed in a well-ventilated room and sleeps the sleep of the just, with no conscience to prick him over lessons unlearned or books unstrapped.

If you are about to dispute my programme of this school of primary importance I would have you remember that out of these earlier years of training in sound health and a good disposition flow all the possibilities of the years to come.

However, we must move forward to the advanced school, for the boy has reached the period of early youth.

I can offer only the same wares in this type of school—a sound body, an attentive mind, and a high moral purpose. Possibly we shall find that somehow our boy customer has changed. There has been an advance step taken by Nature. The sturdy little man of the yesterday of to-morrow has suddenly become an awkward and perhaps troublesome youth, while the boy who was the bane of the teacher's existence has apparently risen to

the position of saint. The teacher will not be in despair, for he knows that the period of adolescence has come. The "he" refers to a man, for in the days of to-morrow those who manage our schools will have its boys taught by men teachers at least during the adolescent age.

Probably before this you have wondered how the boy ever got into this advanced school. I have implied that he knows no formal grammar nor partial payments. The high school of to-morrow took him simply because he was strong and well, clear-eyed and accomplished, full of promise and power, and looked as though he could do its work.

The advanced step taken by Nature means an accompanying change in the way of approach to mental development. The foundation has been well laid. Now comes the formal work in language, mathematics, and science. Even the teachers of yesterday who may be left in the school of to-morrow will not try to undo the work of the earlier years. They will have no temptation, for the boy stands first, and not the college entrance requirements. To speak in confidence, the latter have disappeared in the development of the school of to-morrow.

The algebraic proof that $A^0 = 1$ has gone into oblivion. The self-evident fact that only one perpendicular can be drawn from a point to a line has met its reward. The problems of falling bodies have dropped even further than was ever calculated in any class.

Why, you ask? Simply because it has been decided that there are better things to teach. The teacher has learned that the doctrine of formal discipline was as absurd as infant damnation. He has discovered that the useful in education is also liberalizing in its results. He recognizes that culture must always be a by-product and that a liberal training without vocational direction is often ineffective and always inefficient. He has awakened to the fact that there is a wealth of scientific applications about him which can be brought into the schools. He sees that history is being made every day and that there are more political and social forces at work with their problems to solve than ancient Rome ever dreamed of. He realizes that there have been some good writers since Chaucer and Milton and that the magazines and editorial pages are, to say the least, up to date.

I need not enlarge upon these more formal studies in the advanced school or upon the organic work in music and handicraft or upon the uses made of the well-equipped gymnasiums and swimming tanks, for they all provide for the wholesome life of the body, of the mind, and of the spirit.

I might say just a word about the careful and practical instruction given to the boy in the race instinct of his preservation. This will be taught in all reverence and sweet-mindedness by the teacher. It will rest upon a thorough knowledge of physics and chemistry, and in this way it will be scientific. It will be treated frankly and helpfully, for in the days of to-morrow it is to be hoped that the body will be so beautiful and so wholesome that we shall not be ashamed of it.

In other ways the advanced school of to-morrow will contrast strongly with the high school of yesterday. It will teach its boys how to study. Much home work will be eliminated and the school day will be longer. The teacher will not spend all his time in hearing recitations; he will not issue commands, "Get the next fifteen lines in translation," "Do the next twenty-five prob-

lems," and leave the boy to work out the lessons assigned to him in the best way he can.

In the days of yesterday the home was usually the place for acquiring knowledge and the school the place for reciting it. In the days of to-morrow the recitations will be the acquisition and not the inquisition period. In this way the cause of culture will be furthered by turning to account the amount of energy which formerly went toward keeping students out of school by helping them after they get in.

Perhaps you have received a letter from the teacher of yesterday complaining that John did not get his lesson. I wonder if you ever were on the point of answering, as my friend McAndrew says that the parent of one of his pupils did: "If instead of writing letters you would explain your lessons to John and would teach them to him you would not need to waste postage."

In the days of to-morrow the educative process will continue for the whole twelve months. It was direct evidence of a lack of efficiency for the school of yesterday to have limited its unfolding of a human spirit to five-hour days for five days of the week and for one hundred and sixty days of the year.

Possibly you provide for your boy in the private summer camps. You may do this to save his mother's nerves. Even then you hardly realize that the summer season is the best time of the year for the richness of the development of a wholesome, sturdy boy.

In the old days, I know, both the teacher and boys needed a rest. From experience I realize how tiresome it was for teachers to ask questions all day long when they already knew the answers, and how hard it was for immature boys to play the educational game when they felt that the cards were stacked.

The school of to-morrow, standing for health and joy in labor, will not have its work interrupted by an excess of holidays and vacations. In fact, the educative process will be so wisely distributed between the work done in the school and the home that every day will be both a holiday and a work day, the school simply adapting its occupations to the requirements of the season. We have not forgotten that the schools of the future will have open playgrounds or roof gardens, that the cities will have large public recreation centres, and that the parks

will have some free play space where "Keep Off the Grass" remains unposted. Furthermore, the city of to-morrow will not leave to private enterprise, with its sordid idea of gain, the control of its popular amusements and its breathing spots by lake or beach.

I have mentioned a third division, supplemental education. Up to this time we have been thinking of the educative process in terms of the fundamental requirements of life, a sound body, an alert mind, and a humanized soul. Our boy will be well grounded in language, citizenship studies and responsibilities, in elementary and applied science. Unconsciously he will have absorbed the elements of culture. He is ready to supplement this groundwork by further study at the University. I will leave him at its doors, knowing that the good health and organic power which has been built up with so much care will be conserved and heightened in this institution.

However, not all boys can walk leisurely through the halls of learning. Some must of necessity quicken their pace, for they are about to go to work. Perhaps some have already entered upon the world's work. My *à la carte* service must provide

for a quick lunch, and it must be open day and night. In this way it will be available to the boy all through his life. There must be no distinct line of cleavage between his period of formal education and wage-earning work. He must always be a student as well as a worker, with time enough to spare from both for recreation and the full enjoyment of life.

Many a boy left the school of yesterday at fourteen with the feeling of relief that his school days were over. He said, "My education is finished," and we believed him. It had pointed him toward the academic callings and he had failed to make good. He was not one of the talented tenth, and so the school lost him. The choice of his occupation was left to chance and he went to the mill, to the store, or to the office without any knowledge of his fitness for the work or any preparation to give him a broad outlook upon his chosen vocation.

The school of yesterday trained its youth for a "job," while the school of to-morrow will train its youth for a vocation. It will provide for every vocation for which there is a reasonable demand, and in the school the boy must remain until there is ground for

believing that he has found a calling for which Nature and his own effort has prepared him. At that time the boy will not have to be of the Negro race to go to a Tuskegee, or be a youthful criminal to learn a trade at an Elmira. Furthermore, to earn wages at a trade for $4 a day will be as honorable as clerking at a salary of $10 a week.

Moreover, the school will furnish to the boy reliable information and competent advice as to the various vocations open to him, the conditions prevailing in each, and what the rewards of success may be. The principal in the school of yesterday knew little of the industrial and commercial requirements. If a boy showed little aptitude for static culture and his economic condition forced him to go to work early in life his teacher had little advice to offer with reference to the world's work. If the boy was particularly dull with books and uncouth in manner he was told to learn a trade. If he was gentle-mannered, smooth-talking, and kept his trousers creased, a clerkship in a store was suggested to him. But the whole scheme was based upon fitting the job in mind to the attainments that the boy now had.

The school of to-morrow, however, will

try through vocational guidance to fit the boy to the job that he will at some future time be able to fill. In order to do this effectively it will employ an expert who makes investigations of conditions in the trades and different lines of business of the locality, prepares for the use of pupils and parents material that will furnish the best available information concerning the vocational opportunities, and bring about a coöperation between the employer who needs the right boy and the boy who needs the right job.

The school of to-morrow will not only help the boy to get the best possible job but it will make provision for him to continue the educative process. The boy will not have closed against him the door of further liberal and vocational training just because he has gone to work. It will be recognized that the stability of an industrial democracy depends upon the attitude of its citizens toward work and the way in which they do it, and that any line of employment which fails to leave a healthy reaction on the individual is detrimental to the interests of the State.

Through its system of continuation schools Germany has given the word to the school of to-morrow. The dull monotony of the

factory grind will be broken by attendance upon a public day school for a few hours a week in order that the boy may receive instruction in the science of his trade and in those liberal studies which will make for joy in work.

In the days approaching the to-morrow it was thought wise and proper for the State to regulate the hours of child labor, to require in the factory so many cubic feet of fresh air per hour, to demand safety devices for dangerous machinery. In the to-morrow it will have a further right to step in and say to the employer: "This boy is still in his teens. He needs to grow mentally and physically. His present work is confining and narrowing. You want his services. He needs your money. We recognize these mutual relations. However, still more does the State need him as a useful and efficient citizen. For this reason we require you to release him from his work and allow him to attend a part-time school in order that he may expand."

I have said enough to make it clear that the schools of yesterday were so arranged as to make it convenient to teach. Those of to-morrow will be arranged to make it

convenient to learn. The people of yesterday boasted of the free-school system and its compulsory education. But schools free in tuition and hidebound in traditions were not truly free. Compulsory education was a misnomer. It was an impossible end. Compulsory attendance was possible, but it required a truant officer and a court order. We can compel a boy to sit upon a dictionary, but that does not mean that he will learn to spell. We can not compel boys to learn. They must be interested and see some good in it all. Furthermore, their parents must believe in the educative process.

A stream cannot rise above its source. The teachers of yesterday were piece-workers and the schools were educational factories. It was the day of specialization. No teacher saw beyond his machine and his pet process. There were many machine hands on as many machines, all working to make a finished product by a single system of production. The parts had to be assembled and this all-important feature was left to the boy. Few fitted them together. The world was strewn with the wreckage of these half-finished parts, and the by-products of character building and culture were lost in the scrap heap of unrealized ideals.

The principal and superintendent were interested in developing an educative process which had all the analogies of a business organization. They alone were in the position to assemble all the parts of instruction, but in their bookkeeping, cost accounting, and ratings of work they lost sight of the finished product — the boy.

In the school of to-morrow the teacher will be a master craftsman. He will be the artist and not the machine hand. He will take the human clay and fashion it into its various shapes rather than dump it in a common mold between the levers of tradition and uniformity. He will have before him as his model the image of the perfect man of to-morrow — sound, accomplished, and beautiful in body; intelligent and sympathetic in mind; reverent in spirit, and productively efficient. The teacher and man-to-be pupil will be ready to place these qualities at the service of the social purpose of to-morrow.

You ask what is this social purpose. It is increase not alone of material but of human wealth.

The Boy of To-morrow

THE BOY OF TO-MORROW

WHAT THE SCHOOL WILL DO FOR HIM

The article receiving the second prize in the World's Work educational contest

BY EUGENE M. GOLLUP

LET us take a few minutes to go through school over again. We will do it backward this time — begin with college. Take any college; take your own, if you please.

We come to college with high ideals and lofty aspirations — age nineteen. Public school and high school were college preparatory. Here at last we should have teachers who are Ph. D.'s, wonder-men who write text books and actually make knowledge. We are determined to work hard and "get there"; we remember that "there is always room at the top" and "where there's a will there's a way." We are conscious of treading on holy ground when we first cross the campus. Our first look at the professor carries with it a world of respect and veneration.

A gradual change comes over us as the

days pass. We soon find that we have been fooling ourselves. The teaching is positively worse than in the high school; the subjects are called by high-sounding names, but prove rather tame and humdrum. Some courses are prescribed, others are elective —we carry five, six, or seven at a time. We get the things thrown at us by lecturers who teach "math" or "chem" or "sike" or "dutch." We begin to find that we are not studying, but taking down lectures. We are assumed to be a lot of bottles, more or less leaky. We are given fine marks in philosophy, psychology, economics, ethics, but we know well that we really know next to nothing. We cover "ground"; we take up great books, mouth them a bit in class, review them in essays, and pass "exams" on them. And so we get to see the whole business as a huge joke. The glory has departed, but the lessons are left as a sort of necessary nuisance. We get to speak of our studies as "mush," "wind," and "that sort of rot," and take the limit in "cuts." Only the "pluggers" study, and they are looked upon as boys well deserving of contempt and a little pity. For a bright boy does not need to study if he knows how to

steer his courses, and this he learns in his freshman year. We do nothing crooked on the campus or on the athletic field, but "cribbing" is perfectly right, though seldom necessary; and then there's the risk of getting caught. We don't mind handing a well written essay on "conscience" to a fellow who is going to take the course in ethics next year — it will save him two hours of penmanship. For learning ethics here is copying it out of a book. But we do study the teacher; we study ways and means of getting a passing mark with the least possible waste of time and effort. Then there are laboratory courses, but here the emphasis is thrown on note-taking and routine. The most technical experiments are done first — we do them in their "logical" order. All work is done with a view toward an "exam."

Strange to say, the most irksome work is that in physical education (prescribed). Athletics is one thing but "physical ed" should not be mentioned with it in the same breath. We do athletics for ourselves, physical education for the professors.

There is no competent advice to be had as to what should be studied, what courses should be chosen. Our professors and ad-

visers do not know us; they are too busy with research to pay any attention to us.

So we turn to athletics and social life and we give most of our attention to these things. Here everything costs; those who have money take joy-rides and late suppers, those who have not play hand-ball in the "gym" and, occasionally, have a dance. At this point the fellow who "works his way" gets "scarred." A fellow who has to pay visits to a pawnshop cannot get very far into college society, whether he happens to be in Yale, or in Columbia, or in the University of Missouri, or anywhere else.

We are always glad to start on a vacation and always sorry when class-work must begin again. Vacation comes and vacation goes and between vacations we peck at spots on the surface of all sciences and all arts. The daily assignments and petty directions become unbearable, but we have got to graduate. And we do. We march to the tune of the baccalaureate sermon and get the "dingle-dangle." We are "through" college.

It does happen sometimes that a student becomes permanently inspired by some great personality, a Sumner, a James; but that

does not happen to everybody. College life is not conducive to such happenings, for the great man seldom comes from behind his desk. He is too busy. Boards of trustees are in control of everything and the great educators are kept on the "back porch."

Let us now go back of the college and into the high school. Here we find boys swallowing text-books. High schools have gone through a reform wave and there is now some choice of subjects permissible. Unfortunately the choice has to be made before the subject is taken, so that the boy takes his "chance," not his choice. Those who oppose free choice properly object that the boy does not know what to choose and has nothing upon which to base his choice. With the prescribed subjects, on the other hand, we get total disregard of the individual differences of the pupils. But with text-book teaching, the subject chosen or prescribed does not make much difference. It is not a choice between history and mathematics, but between swallowing one text or another text. A popular teacher often becomes the cause of the popularity of his subject.

Quite another side of life is represented

by sport. Here we get football, baseball and basket-ball. We get living, breathing, rough, tough sport versus shadowy, bodiless "subjects." We now divide life into sport, which we love, and work, which we hate.

A dogged hope seems to be the distinguishing characteristic of the boy in high school. He has high ideals and tries to live up to them. Most high-school boys look upon themselves as college material; they become accustomed to think of themselves as students and try to bring a student atmosphere into their lives; they form literary and debating societies and "frats." They are very fond of athletics and read the "sporting pages" of the evening papers.

The school does not undertake to control and direct these activities into educative channels. It devotes itself to administering text-book absorption, without regard to individual needs or utility. It treats the child as the landlady treated her sick boarder. The good woman administered Specific No. 18 without effect. So she tried two doses of No. 9, but still the fever prevailed. She now forced three doses of No. 6 down his throat, but the sick man only got worse; whereupon she gave up and called a doctor.

"Oh, Doctor, what is the matter?" she asked in desperation.

"Well," answered the doctor thoughtfully, "the patient is suffering from a number of complaints."

"Yes, yes!" exclaimed the woman, "But what number?"

Thus in the school; it bottles up some studies in text-books and then it proceeds to administer "specifics" — that is to be considered an education. And then we wonder why the boy is not educated. In education, as in medicine, it will not do to prescribe "specifics," but each case must be diagnosed by itself and be treated according to the advice of an expert in education. We have been in the habit of looking upon the educational process as a sort of "pouring in" and have not yet gotten over our surprise to find that that is not educative. It would be inhuman to start a young man in life with nothing but a "good" education of the "pouring-in" kind. Happily, we don't do anything so cruel; we send the boy out among his fellows and let him get used to real situations, as best he may, outside of school.

One phrase I heard so often in grammar school that it is ringing in my ears even at this moment, was — "I want your attention." How often I did wish I could give it to her for keeps! I can see her now — my "school-marm" — tall, bony, and stern, wielding a ruler about double the length of ours. I was ten years old when she spent a day in trying to tell me that an apple divided into two parts became thereby two half apples. She believed in going "from the known to the unknown"; first, "preparation"; second, "presentation," etc., etc.; never a "step" would she skip — she was well acquainted with Herbart. She began every day by telling us that we were a lazy lot of good-for-nothings, and finished it with rapping our knuckles with her overgrown ruler.

I wish I could put behind steel bars the tyrants — teachers, so called — who paralyze the child with fear, physical and moral. I have heard "teachers" say laughingly, "My children call me a 'murder.'" There are many "murders" in our schools to-day.

Get up early any white winter morning and take a long walk on the newly fallen snow. You will find that the boys have

been there ahead of you, and you will find them there till the snow is all sodden and muddy. They work; they work hard. They make snow men and build forts and embankments; for there is nothing a boy loves so much as to be up and "doing." And yet teachers find it difficult to get children to work.

There is a sameness about school which makes it terribly tiresome and hard. Outside there is a continuous good time to be had and the days are only too short. In school, boys are asked to sit and listen and to repeat meaningless tables. This is truly a heavy burden, but the New York Child Welfare Exhibit, comprehensive as it is, forgot all about it, forgot the enormous burden of books that brings a premature stoop to the boy's shoulders, puts unsightly glasses on his eyes, and ruins the health of the most obedient and the most studious. Who can tell to what extent the delicate health of our prize boy is due to his studiousness?

We spend hundreds of millions of dollars in getting children to "cram" for examinations — and what is there educative in preparing for an examination? What qualities do we select by means of an examination?

Wherefore the nerve-racking grind to "cram" down hundreds of pages of text? If I memorize Spencer, do I therefore know the universe? On January twenty-third, last, the Dean of Teachers' College, New York, said to an audience of about six hundred teachers and students of education, "You know and I know that examinations are a farce." He was applauded to the echo. Let us then say good-bye to examinations. Expert opinion has pronounced against them, and this is the age of the expert. Surely we are not barbaric enough to continue prostituting our educational activities to examinations.

That, doubtless, is the dark side of the picture, but it is all that could be said for the typical school of yesterday. Along with all that, however, we find in the school of to-day tendencies toward better things and more rational treatment of the school problem. We now think more of the child and less of the subject; we do not frown on song, as we once did, and play is no longer sacrilege. But even to-day we leave a yawning chasm between play and work; we cut the child's life into stripes, and make ugly, unharmonious patterns.

The faults of the school of yesterday were

due to lack of knowledge of the nature of the child as a growing organism, but the recent development of the sciences of biology, psychology, and sociology has now made it possible to go about the work of education as the expert engineer goes about the building of a bridge. The engineer knows the properties of his material and what sort of structure he wants to build. The educator knows the boy and, also, he knows that he wants to produce a man capable of taking his place as a citizen in a free democracy. It becomes evident that, as taught in the past, the boy of to-morrow will hardly get very far in the direction desired. The science of education condemns wholesale teaching. Each child requires treatment suitable to his own nature, to his own needs, to his own future requirements. The kindergarten is now trying the newer methods in education and it therefore becomes the link between the school of yesterday and the school of to-morrow. Indeed, it may properly be called the school of to-day. The schools of higher grade, so called, are still employing the coercive, disciplinary, text-stuffing methods of yesterday, of the unscientific past.

We have, then, the boy of to-morrow, coming up from the kindergarten, where he is a member of a simple society, protected alike from bad habits and from being run over by fast automobiles. The play instinct and the instincts of curiosity and imitation are here utilized under the leadership of the teacher, who works shoulder to shoulder with the boy. The subject of study is the making of things — all things which a child can learn to make. If he is working with things, his attention will never wander; he will not need to be told that he is lazy. We will eliminate the chasm between work and play. We will throw drudgery overboard and make play productive and educative. We will make it unnecessary for our boys to go to "Jesse James" books and to the "comic" Sunday Supplement. From infancy, through childhood, and into the early teens play will continue to be the basis for an introduction to the simpler pursuits of everyday life. The period, which is now wasted on "compound interest" and "square root" and the geography of Africa and on listening to inspired lectures on attention and laziness, will be given instead to useful, educative activities, to learning the use of

things, to useful "doing," to making simple household implements, to singing and dancing. The school will help the boy acquire facility in the spoken and written use of the mother tongue and in the expression of ideas by means of drawings and pictures. This he will learn through the free exercise of his instinctive powers of expression and through the formation of good habits of expression under the guidance of his teachers. We are not going to hamper his progress by scientific grammatical generalizations and disquisitions on the philosophy of language until he reaches a stage, in college perhaps, when he will be prepared for such studies. Most of the boy's time must of course be spent in the fresh air, in active, unrestricted physical exercise, so as to permit the building up of a healthy body. Instead of "crap shooting" we will have wholesome play directed toward getting control of body and mind — play directed into educative channels. Children gamble because the streets present no material for legitimate play; adults gamble because they got into bad habits as children. We'll give our children things to play with and teachers to direct them; we will save the necessary

money cost by the reduction of the amounts appropriated for court and police and prison expenses, which the right kind of educational facilities will make possible. We can do good through normal play activity, properly directed; we can do only harm, physical, moral, and social, through unnatural restrictive prohibitions.

Instead of requiring stereotyped uniformity and stagnation, the teacher of to-morrow will encourage multiformity and inventiveness. He will teach boys, not "partial payments." He will teach boys the meaning of "denominate numbers" by letting them work with quarts and pecks, not by verbal drumming in of the "dry measure." How many of my readers can tell me which is right, "4 quarts make 1 peck" or "4 pecks make 1 quart?" I myself do not know, yet I have drummed at "dry measure" for many a long spring morning. Let the children measure several quarts and pecks of sand, let them accumulate fortunes in sawdust, and I warrant they will never forget "dry measure." Let them learn to love the fair and square deal at school, let them get into the habit of giving "full measure to everybody" before they leave school.

Our schools will be in use all the time; we may even devote a room or two and a teacher or two to giving a little embyro President of the United States the wholesome sleep which he may be unable to obtain at his home in an East Side tenement. Decidedly, five hours per day will not be set as the limit for the use of school buildings. Under proper leadership, teachers — true teachers — will be proud to give their lives to the service of humanity; but, in return, they will be treated as teachers, not as machines; they will have an intelligent word to say about the curriculum, the course of study, and the conduct of the school.

In early adolescence the boy will be ready to be introduced to the social life of the adult community, for which he will be prepared by his experience in the simpler boy organizations. It is well worth while for the state to see to it that boys be made ready to take their places as citizens in a free democracy.

I can see the boy of to-morrow growing up to a fruitful youth through a happy and industrious boyhood. He will be brought up by earnest, public-spirited men and women, who will be artists in teaching and who will have, at the same time, a clear

conception of the importance of their mission. But let us remember that the boy of to-morrow will be just a boy — much like the boy of to-day — full of fun and frolic and jollity. He will have all the material and opportunity necessary for wholesome play, so that he will never need to tie a can to a yellow dog's tail. Our boy will be just a clear-eyed, rosy-cheeked fellow; we will not find him carrying, over a pair of thick spectacles, the towering brow full of weighty wisdom. He will not need to go for recreation to coarse "supplement" matter nor to "blood and thunder" five-cent literature; his ideals will be personified by the clean, loving men and women around him and not by "Wild Cat Harry." There will be no deep, unbridgeable contrast between work and play, so that he will have no need for explosion of pent-up spirits — no "Sis-boom-bah" matter. His fun will be just healthy "fun," and we shall always feel free to join in the laugh with him.

The souls of our children will be safe if we refrain from poisoning them through narrow prejudices and metaphysical quibblings. If we surround them with clean and healthful conditions of life, if they meet

none but whole-souled, honorable, and loving men and women, we need have no fear as to the outcome of their education on the moral side. We must remember that a religion, a philosophy of life, cannot be strapped to the head of a child. We will not give it to him until he is ready, in mind and heart, to accept it as a free man. Until then we will leave no gaps whereby evil may enter into his soul; we will protect him against pollution.

A boy of thirteen is ready for work directed into special channels. There is no good reason why every boy, growing into manhood, should not aim to become an expert at something. At this point the selective powers of the school must show their quality. The responsibility for getting the boy into the trade or profession where he will be most efficient should rest with the expert in educational psychology and not with the child. "Free choice" for the child should not be used as a shield for the ignorance and imbecility of the teacher. The school of to-morrow will make it part of the teacher's duty to see that there are no misfits anywhere. Teachers — big brothers who know all about you and love you — will make it their

business to know all about the boy. They will use all the devices known to scientific psychology to ascertain definitely what may best become this or that boy's life-work and how he may be fitted for it.

By to-morrow we will have ceased to make apologies for vocational training. The teaching of trades will have passed through its experimental stages. We recognize already that it is to the interest of the State to give of its best not only "to him who hath" the physique and mentality to become a leader, but also to him who must devote his life to the hewing of wood and the drawing of water. The school will go into whatever field education has a place. It will teach the making of hats and shoes as well as music and painting, medicine and law, chemistry, and poetry, and history, and philosophy. In France there is now a national school of dramatic art, and those who are competent to judge say that it is doing a noble work. France now has a drama and a dramatic art and an appreciation of the right kind of drama; but what have we? The course in printing given in the Graduate School of Commerce at Harvard is a public asset; it will improve the

art of printing throughout the country. Who then will undertake to draw a line and say that education shall progress no further, shall teach this but not that? To limit education would result in a one-sided, unsymmetrical state of art, of industry, of science, of culture; it would result in a one-sided man.

Of course we shall have to find names for the various grades and divisions of our developed school system, but we shall come to terms after a little while. On my part, I see no reason why a school for experts in carpentry may not be called a college of carpentry. Why should not a degree in carpentry be equivalent, for purposes of educational administration, to a degree in music or in law? For the training of an expert in carpentry will be a liberal training; he will not be a maker of shoe-trees, but an educated, broad-minded expert in woodwork. We shall have specialists, men able in their professions, efficient in industry, men who know a good deal about something, leaders in progress. We shall not have men who specialize in stagnation and narrowness; we shall not have men who get lost when they leave their own narrow little nook. We

shall have men doing things they know something about; a specialist in chemistry will work in a chemical laboratory and not in a public school.

In college and in high school as everywhere in our school system, we shall have teachers who are specialists in teaching, not in philosophy or astronomy or geology. The teacher's specialty is teaching — always. Research in physiology is one thing, teaching physiology is quite another and a very different thing. The college student cannot profit by contact with the specialist in geology. Only when he has graduated from college and has taken geology as his own specialty, when he is himself ready to do more advanced and more minute work, can he be safely left to work by the side of the man who gives all his attention to his subject.

We have already begun to differentiate between teaching and research. We are already sending some of our workers in highly specialized branches of scientific research to the Rockefeller and the Carnegie and the Sage foundations and to the various scientific bureaus of the National Government in Washington to carry on their studies. We shall have many more of these scientific

centres, and in the end, we may hope to have clear demarcations between college teaching and research. University work, special advanced courses in medicine and in law and in the theory of education will be given to all those who are preparing to be specialists in these fields. They will be given by those who are specialists in education and have enough knowledge of these subjects to teach those who are taking advanced and concentrated work in special lines.

True culture along with social efficiency will be the ultimate aim of education. Great, broad-minded educators will seek to impart to every child of man a culture that makes for manhood through giving an increased sense of human kinship; that makes for knowledge as broad as it is deep; that brings feeling into concert with intellect; that makes for a rich, full and well-mannered life. Such culture will produce men who are big of heart and clear of head — men who pray not for palaces, but for the power to build palaces, not for the removal of pain but for the strength to rise above it.

The Girl of To-morrow

THE GIRL OF TO-MORROW

WHAT THE SCHOOL WILL DO FOR HER

The first prize in the World's Work educational contest

BY BENJAMIN R. ANDREWS, PH. D.

SECRETARY OF THE SCHOOL OF HOUSEHOLD ARTS OF TEACHERS' COLLEGE, COLUMBIA UNIVERSITY

THE girl of yesterday we grown folks all know. We went to school with her, we played games with her, we went off to college with her — the same college if our lot was cast in a co-educational democracy.

The education of the girl of yesterday — we all know that too! It was the education of the boy of yesterday. It lay first of all in the public school or, in favored communities, in the kindergarten, where "gifts" were expected to create in the child mind a certain world-view dreamed by a German philosopher, but where in reality social activities and games first brought little barbarians to the yoke. And through this kindergarten porch the girl of yesterday went

into a graded place called a school — a sort of temple of knowledge with many great terraces, on each of which she lingered a year; and there she mastered numerals and letters and numbers and words, and learned how these odd dead things made books, readers and spellers, and more spellers and readers, and geographies and histories and grammars. Yet all this was for her only a confusion of memorized symbols and words, a veritable desert relieved by occasional vivid teaching. Outside the school it was that the girl of yesterday had her real education — on the playground, in the yard and garden at home, in the house with the family group — wherever, in fact, real interests and activities took hold on life itself and shaped mind and purpose.

From the graded school, the girl of yesteday went on to the classical high school. How wistfully and fearfully she had looked across the green to the Academy! And when the Irish janitor — rest to his soul — brought across one day the Academy skeleton "that the eighth grade children might see how they were made," the girl of yesterday had wondered whether she must learn the

208 bones — or was it 206? — when she too reached the high school yonder. In due time she came there, and found it all, alas, a place of bones, not only in physiology, but bones in history — "name the presidents in order," or "who were the nine muses?" and bones in Latin — "*do, dare, dedi, datum*"; and often only bones in literature — "give names and dates of Scott's novels." Lucky that life went on in social groups, in school and out, and in the home!

Occasionally, the high school girl of yesterday wondered what she would do when school days were over, and of all professions teaching alone seemed open to her. All the world is a sea to the sailor, and to girls just finishing the old-time school, teaching seemed the only profession.

The old high school course — with its algebra never applied in life, its analytical study of literature, its stilted compositions, its endless translations and paradigms — employed the mind in innocent exercises. That this had somewhat of useful discipline, we will not deny, but it gave no practical training for life. As the student grew to maturity, her knowledge of the world as it is, came through outside experiences, and

widened — if it did widen — more despite the high school than by virtue of it.

Of the girls of yesterday who started in the elementary school, one in ten received a high school education, and less than one in a hundred of those who finished high school went on into college. To those who went to college, education was offering at best only a continuation of the literary curriculum of the high school. Brave women in the last generation had demanded women's colleges and women's departments in universities, but what courses they gained were largely serving to perpetuate literary culture and to prepare for teaching. Matthew Vassar's fine aim, to train women to be self-supporting, was buried at once under classical tradition. Men's colleges for a generation have been differentiating into groups of scientific and professional schools — engineering with its varied phases, law, medicine, agriculture, commerce, journalism, and what not, each offering a diversified preparation for a distinct vocation. All this time the woman's college has stood by its general literary and scientific courses and against vocational specialization, until finally some one remarks in passing that "in women's colleges alone

is the education of the gentleman held in its proper esteem."

The college girl of yesterday, the one in a hundred who could go on to college, found herself in a blind alley — literary culture with its two outlooks, the life of the idle gentlewoman, or the life of the teacher, and then more literary culture. The woman of to-day — the girl of yesterday — if she is broad-minded and generous and serviceable, owes her high qualities to the formative social influences which have shaped her life, rather than to her formal education.

But the girl of to-morrow — what of her education? You will not find it embodied to-day in any one school, but here and there you can get partial glimpses of the world to be. Come into a certain elementary school in Manhattan where the aim is preparation for serviceable, happy living, not for pedantry. Note the equipment: a large gymnasium with apparatus suited to fixed exercises, with plenty of baths, with ample space for folk dances, pageants, drama — in short, with opportunity for all kinds of activity except swimming; there is a library and reading room where little children work during school hours, learning that books are tools to be

used by all people in every practical undertaking. Each class room is equipped, not with fixed desks for parrot recitations to a parrot teacher, but with ordinary work tables and chairs suitable for working operations, for conversation, discussion, and coöperation; and there are special rooms besides — a cooking room and dining room where little girls learn the wonders of bread doughs and soups, a shop room where the rougher, heavier constructive work is carried on, a sewing room for clothing projects, a club room giving place for social activities, a garden space on the roof in lieu of Nature's space on the ground. Such is the building, and within it one finds life, not barren schooling. Can I say better than that each subject is lived through, not learned — that one acquires letters to read a loved story, and numbers to count and control some matter already of real concern; that one studies history to understand the puzzle of the Stars and Stripes and the devotion of the veterans on Memorial day; and geography to know why there is a valley here where the school house stands, and to know where these ships are bound that pass on the river.

The way of real education is the setting

of the child's mind to solve the problems that life fixes; and this way my ideal elementary school has found. Not only in method but in content of study does it reach out into life's realities. The weakness of the old school was that it worked in a vacuum; the strength of the new school is that its subject matter of instruction is not only literary material and scientific results (as in history and geography), but that all this and everything in its curriculum is taught as an interpretation of the work-a-day dynamic world in which we live. The new school will give to pupils at fourteen years of age intelligence regarding the various fields of work — professional practice, trade, commerce, or housekeeping — which are opening up before them and will thus aid in that most fundamental decision — the choice of a vocation. Industrial and vocational intelligence (not specific vocational training however) describes this new aim of the elementary school. Through this period, the training of both sexes will stand substantially alike, liberalizing, cultural, problem-solving, informational as regards the world just ahead.

What now of the higher schools, where the

girl of to-morrow fits herself for the woman's work of the day after? Come into a certain great new technical high school in an Ohio metropolis. It has for its principal the graduate of an engineering college, and it offers courses especially for boys and courses especially for girls. Here the girl who must soon make a livelihood may prepare to be a designer in special fields, an illustrator, a house manager, a private secretary, a dressmaker, a milliner, an infant's nurse, or perhaps a skilled cook — and she is trained in such a way that she keeps a more liberal outlook on life than the specialized worker of to-day dreams of. Or go to Chicago with its promising two-year vocational high school for those who can tarry but two years after grammar school before going to work. Take notice of its system of coöperation between school and shop and factory, which successfully combines instruction and practice. And this is but an indication of a mighty revolution in education — the girl shall be taught a definite vocation (outside of home work) as well as the boy. The school shall prepare young people for practical life. The elementary school, although it will not teach vocations, shall fit children

to make an intelligent choice. The high school shall give them the training they need for their elected careers; it shall offer courses of varied length and purpose — two years for those who stay only so long, four years for those who remain longer. With vocational training shall go some liberal culture, so that, ultimately, every man shall have a vocation and a free choice of avocations at his command.

The girl of to-morrow who can postpone her vocational choice shall find an opportunity in the high school to continue her liberal education; but for her benefit there shall be highly specialized schools which, when she has finished her preliminary training, will give her scientific preparation for useful work. A number of such schools are already in existence.

Go to the splendid institutes in Brooklyn, Philadelphia, Rochester, and Chicago, established by far-seeing men of wealth to train high school graduates for practical service, and canvass the training offered there to the girl of to-morrow. Preparation for household management, woman's traditional field, is provided as a matter of course — but note with what new implications and

applications. First, we find hundreds of teachers of domestic science who may increase the efficiency of private housekeeping through that socializing instrument, the public school, to the end that housework may pass over into a science, as the poor decrepit farming of the last generation has become the agriculture of to-day. What of the household when methods of dry farming, irrigation, Burbanking, modern chemistry, bacteriology, and mechanics shall be turned loose within doors as well as out on the land? But new opportunities in household arts are also opening in every direction. In the Rochester institution there is a course of training in lunch-room management, in which the young women are instructed in related science, but especially in the practice of their profession by daily responsibility in conducting a lunch room for 200 students. The graduates have been quickly absorbed in Rochester by wise managers of banks, department stores, and factories; one, salaried at $1,200, directs her French chefs and feeds the 300 employees of a department store; another manages a lunch room in a huge clothing factory, and, since her advent, saloons across the street have gone

out of business. A similarly trained young woman took hold of a lunch room in St. Louis last fall, improved the service, and turned a deficit into a $290 surplus the first month. Schools, banks, mercantile and commercial houses need the trained lunch-room manager and are discovering their need and how to fill it. It is only a step from this to the commercial lunch room. The best lunch rooms in Boston, and they are among the largest too, are to-day conducted by a trained woman, and they are cleaner than your own kitchen. Even the despised delicatessen shop and the commercial bakery may yet come into the hands of the trained woman, who will give us there, on a grand social scale, the safeguards to health which in the past she provided for the private home. Again these institutes are fitting women to conduct dressmaking shops and millinery shops as skilled business enterprises. Who knows but that escape from the robber-barons of fashion will come through the more intelligent professional standards of those who clothe us? All kinds of artistic achievement, in design, in illustration, and creative work in all the special fields for which deft fingers and the sensitive eye are essential,

as well as enterprise along commercial and industrial lines, are other ventures which these practical institutes are providing for the young woman of to-morrow.

What the young man of to-morrow does, the young woman of to-morrow may also freely do if she will — and so we shall then find her occasionally, as we find her now, in the advanced professional fields of engineering, law, medicine, and the ministry. It is well so, for absolute freedom of action is the only possible basis for a wise choice of vocations. The young women who go into higher professional training will, however, fit themselves, as a general thing, for the fields of service that belong distinctively to women.

But what about a professional, specialized education for women, on a university level — an education that corresponds to the training young men receive at schools of technology? For answer, go to a certain pent-in Manhattan street and enter the business-like looking structure that stands there. In this building seven hundred young women are hard at work studying the household arts. Make inquiries about them. One is the director of a college dormitory, come for special instruction in dietetics that

the 300 girls in her charge may enjoy nutritious food while her expenditures still keep within her budget allowance. Another wishes to be a visiting dietitian, instructing in tenement homes as to the best food for the infant, the working man, and the aged. There is a group of graduate nurses, already skilled in their profession, fitting themselves for the administration of hospitals, or for teaching positions in nurses' training schools. There is a nurse who is matriculated in "laundry management" and will become the director of a hospital laundry. Here are young women preparing in house decoration or interior decoration, others as costume designers and illustrators, or as designers in special industrial fields of unending variety. Others of these young women of to-morrow have entered for diplomas in household administration and in dietetics; preparing, some for general institutional management, and others for the direction of the commissary department of institutions, such as the school and college dormitory, the asylum, the hospital, and the orphanage — undertakings that involve money, materials, and labor in factory-like quantities and for which compensation will be given according to the

responsibility involved. There are curricula which prepare for the less ambitious but no less important management of the private home; and for a new field of special study, that of nursery management, which promises aid in the infant mortality campaign. Other courses prepare for sanitary inspection of markets, tenements, and food supplies, and for various kinds of service in the municipal housekeeping which now guards the private home. Graduates of these institutes will teach to all people the new science of right living, and will make it the law of the land.

Here, then, is a technical school of collegiate rank for women, devoted to the development upon a social scale of those household activities which have long been women's particular domain, and to the professional training of women not only in the conduct of the private house but also of the institution and of related industrial undertakings. What is being done in this building in Manhattan is also under way in other university centres, at Boston, Toronto, Chicago, and elsewhere. In these collegiate schools of household science and arts, which promise to be a feature of American universities as common as schools of engineering, the young woman of to-

morrow will find one of her most fascinating fields of possible study.

And personal life and the private home will not suffer in the education of the girl of to-morrow. Some things seem fairly certain. Every young woman (social parasites disregarded) will be taught some useful livelihood which she will pursue at least until marriage, in some cases after, and which will be insurance if, after marriage, she is again thrown upon her own resources; every young woman will learn the elements of household management in her public school education, so that she may intelligently direct a home, if it comes to her. The industries of the household will be increasingly organized outside the home, and she will bring to their direction her time-proved standards of devotion, rendered more effective by scientific training and professional preparation. With readjustment will come opportunity for life as well as living, and regard for liberal culture will accompany industrial efficiency; this element will be fostered in woman's education as well as in man's, and to the girl of the future will be given an education not only for efficient service but for vigorous health and for liberal living.

The Girl of To-morrow

THE GIRL OF TO-MORROW

WHAT THE SCHOOL WILL DO FOR HER

The article receiving the second prize in the World's Work Educational Contest

BY EDITH HEDGES BAYLOR

YESTERDAY'S little girl, neatly brushed and crisply starched, walked primly off to school for the first time. Her plump cheeks burned as she thought of the untried way; her heart beat fast with excitement, expectancy, and the pride of her six years. She hung her hat in the crowded coat room, where it was overlapped on both sides by other hats, and crept wide-eyed into the school, that fortress of solemnity and oppressive formalities.

Yesterday's child found the wooden seat hard and uncompromising; to sit with her arms folded behind her was torture; her feet refused to remain side by side. Above all she was uncomfortably warm, for the day was the hottest of the season. The whole week was the hottest, yet sixty babies spent

their days from nine o'clock to twelve and from two to four sweltering in a crowded room working for the first time in their lives. Most of them had been learning their letters at home in their own happy way from blocks or animal pictures — it had been fun, play. Play! The word was a crime in the schoolroom. Yesterday's child was a diminutive adult, who had reached her eminence suddenly. She memorized all information, thereby retarding the full development of her latent powers of self-activity. The foundation upon which the whole school fabric rested was memory. No blessed phonetics or constructive hand work led the way to better insight. The child possessing the most retentive memory kept at the head of the class. If she stopped to think she was lost.

To pass into a new reader from the mechanically learned lessons of the last was an event, as was also a new process in arithmetic.

Little Yesterday looked forward eagerly to the mysteries of subtraction, though she had no idea what the word meant. Alice in Wonderland with her "Ambition, distraction, uglification and derision," expresses the anomaly.

George Madden Martin in her inimitable "Emmy Lou" has put the subject in a nutshell.

"Yesterday the third section had said, over and over, in chorus, 'One and one are two, two and two are four,' etc., but to-day they said, 'Two and one are three, two and two are four.' Emmy Lou wondered, four what? Which put her behind, so that when she began again they were saying, 'Two and four are six.' So now she knew, Four is six. But what is six? Emmy Lou did not know."

To Little Yesterday a river was a wavering black line beautifying a map, a city was a dot, and a state was an irregular section of a map, peculiar in color and possessed of boundaries.

Did she learn any music from the music teacher who came one or two hours a week? The drawing book, kept neatly on a shelf, was an object of pride, but did it give the child any idea of form and color? The music teacher with his shaggy hair and odd ways furnished much amusement and the drawing lessons were fun, so perhaps the school board had builded better than they knew.

At recess the children were turned loose

to do as they chose; some played too roughly, some played too little, and others were left out altogether. There was no organized play, no guiding hand. A clanging bell recalled them to the school-room, which with the arrival of cold weather seemed less attractive than ever for the heat radiated from a corner stove and the only ventilation came from open windows. The little ones near the stove baked while those in the other corners froze; all suffered from bad air, or many caught cold.

The children sought diversion during school hours by a frantic waving of the hand with, "Please may I have a drink?" Then came the lingering drink of water from a tin cup used in turn by several hundred children. Let us not forget the slate and the squawking pencil, the bottle of soapy water ecstatically shaken, and the gray rags, those successful germ distributors, used for slates and general desk-cleaning purposes.

Boys caused Yesterday to feel a distinct form of terror. They were turbulent and unexpected, even at the other side of the room where they sat apart, the very fact of their isolation leading them to feel a responsibility of living up to their repu-

tation. One boy was so big and ugly that he frightened Yesterday every time she looked at him and she has never forgotten the day when he was rattanned before the class. The violence of the act was more of a shock to the sensitive little girl than to the boy, who was evidently accustomed to beatings at home.

At another time Yesterday ran to her mother with the startling information that one of the boys was going to have his ears boxed. What kind of a box could it be? And how was it to be tied on? Yesterday was conscientious; she felt it her duty to keep in the first row and when, because of an enforced absence from school or a slip in some memory feat, she was moved down, she cried bitterly, overcome with a sorrow as poignant as the real griefs of after life. Then there were pieces to be spoken, torturings of self-consciousness, except to the children whose already unbearable smartness was doubled.

The term was one long, nervous strain for the small six-year-old; she became pale and excitable, slept uneasily, and was ill during the Christmas vacation. The doctor said she must be kept out of school because

she needed the fresh air, and so lucky little Yesterday shook out her prim braids as she ran, laughing once more, into the world of play.

Some of her companions survived the school strain, either because they were of more phlegmatic temperament or because they had come from such wretched homes that the school room with its stove seemed like heaven.

During the school year measles, whooping cough, and diphtheria took their turns with the children. It was a survival of the toughest, not of the fittest.

Little Yesterday made up in three weeks at home a half year's school work and entered the second grade an older and a stronger child. Her primary years, presided over by inexperienced teachers fresh from the normal school, slipped by, and at last the great dividing line between primary and the grammar schools was reached.

Some of the children mysteriously disappeared at this convenient stopping place, but Yesterday went on. She had heard repeatedly, "Wait until you get into Miss Blake's room; she's awfully cross."

Obviously Miss Blake's every move was

interpreted as an evidence of crossness, and so upon a basis of preconceived dislike the unfortunate teacher struggled to interest a room full of restless children, obliged to sit in rigid, unnatural positions. If we have sympathy for the child of the past we must in all justice feel some for the teacher. When she chanced to be a woman of originality she thought out ways of encouraging it in her pupils; she vitalized her subjects and endeavored to reach the individual. But her day was sure to be short for she did not fit in the machine. She wished for a pitcher like that of old Baucis, in which the milk bubbled up from within; the school system demanded that the milk should be poured in.

Marks and examinations were "The be-all and end-all." Yesterday would often wake in the morning with a weight on her chest, then suddenly she would remember the impending examination in arithmetic. She had studied all the previous afternoon and evening and had slept with Franklin's Written Arithmetic under her pillow. She went to school wishing that she might change places with every street laborer she met, while rules and examples rushed confusedly through her brain. The examination,

whether she passed it or not, was in reality no indication of her knowledge of the subject.

Edgar James Swift, in a recent article, calls the examination, "A heritage from the Middle Ages when knowledge of certain definite and limited subjects was worshipped with frantic fervor."

Rewards, won or lost, caused Yestĕrday frequent pangs and many tears. Like the marks and examinations, they established a false standard.

Absence was a serious offence. Why? Because a certain section of a certain lesson in a book would be lost. Many a time Yesterday went to school with a sore throat rather than confess to it and be kept at home. And frequently other children, less carefully watched, remained in the school room with well developed contagious diseases.

Three friends of Yesterday were thought to be extremely dull. They battled their way through several grades, always depressed and ashamed of being near the foot of the class. By some happy chance it was finally discovered the one was deaf and another near-sighted. The third continued "stupid" until one day in after years when she startled the world by a brilliant

achievement. She had been the exceptional, a typical child, too original to be restricted by a narrow curriculum.

Yesterday was naturally tractable so that conduct marks had no terrors for her, but many of her companions must have thought that school meant conduct marks.

Even good little Yesterday felt keen delight when she heard that a member of the school committee had died, for she knew that a holiday would follow.

The one-session bell pealed a joyful message to her.

One day she met a companion on the street and asked the meaning of a crowd in front of the school building. "The school's on fire and a good job, too. Hope teacher burned," the friend replied, and to this verdict Yesterday cheerfully assented.

At recess the girls, as in the primary school, wandered about at will, the gregarious tendency now well developed. There were objectionable whispered discussions unprevented by directed games or healthful exercise.

Annual class promotions preserved the intactness of the school system. The bright minds were levelled to the grade of the

mediocre, and the dull or actually defective were prodded into places they could not fill.

No one human being could maintain a careful and intelligent supervision of sixty children. No teacher could keep in touch with each girl or study her rapidly developing character, her dawning self-consciousness, her idealization, which, undirected, often became morbid.

The girl was the victim of three conflicting forces: The educators, men whose purpose was the preservation of the existing school system; the home physician, who aimed to establish the physical system of the girl lest she become visually defective, anæmic, nervous at a critical period of her development; and the mother, whose love and ambition for her daughter were often at cross purposes.

Little Yesterday outside the school room led a happy, natural life; she had her chums and her plays, she had her dancing school and her music lessons. Many of her companions, however, fared less well. Their home life meant household drudgery and baby tending. These tasks they undertook with no training and no least assistance from the school.

Yesterday was graduated formally, ar-

rayed in fluffy white, her arms full of flowers. She received her honors with a swelling heart but deep down somewhere was a soreness, a feeling of the injustice of things, because some of the girls did not have white dresses and many received no flowers.

When Yesterday entered the high school, she felt that she had crossed over into a new land, language and customs of which were strange. At first she was lonely; for half of her companions had dropped out either on account of discouragement, or lack of interest, or oftener because they had reached the legal age for going to work in factories or shops.

A pile of new books upon unfamiliar subjects fired Yesterday with ambition; she determined to make a valiant attack but at the end of the first week her confidence was shaken. Every period of every day had found her in a different recitation room presided over by a different teacher, who struggled to impart some information on history, rhetoric, Latin, algebra, or zoölogy. Just as Yesterday thought she could see how she might understand some point in hand, a bell would ring and the subject would be dropped for several days possibly. The

inevitable result was confusion. The history was of one country, the literature of another, the languages were unrelated to either.

Poor little Yesterday had started with an inborn love of poetry, but at the end of the first year in the High School, "Paradise Lost" had become a mere conglomeration of nouns and verbs, while "Gray's Elegy" had degenerated into feet.

The spark of enthusiasm, of live interest that Yesterday had felt was soon extinguished; she plodded on mechanically conforming to the system, a satisfactory pupil because she could adapt herself. Others rebelled against restraint, or lost interest, dropping out during the first year.

When the end of the four years had been reached and Yesterday stood upon the threshold of life, what equipment did she have? She had acquired a smattering of various subjects, a certain glibness; she automatically conformed to established rules and conditions — a doubtful good when balanced against her loss of originality. She had little initiative, she had no broad view of life as a foundation to build upon, she had nothing to link her with the real work of the world.

From the artificiality of her twelve years of school life she now, with the others, entered real life.

The girl wishing to enter the commercial field sought specific training in a business school. Her probable success or failure in her business career and domestic life were limited by the quality of her experience. Business sense enabled her to give a surface smoothness to the management of household affairs but the real home atmosphere she failed to establish.

She who had cherished through her school life the purpose of becoming a teacher attended the normal school for another year and received her appointment to instruct the young. This occupation was short lived as she soon reached her goal — marriage, making an average success through the excellence of her personal standards, her adaptability, and her systematic habits.

And if a girl wanted training for a social life, she received no help whatever from her years in high school. When her home background was meagre and unorganized, she was offered no chance to better her conditions. She inevitably became the house-

hold drudge characterized by overwrought nerves and understimulated mental powers.

Yesterday's career was for several years in the social world then in a home of her own, built on the model of her mother's home. Her inheritance of artistic feeling, the appreciation of good management, and the high ideal of family life made her a true helpmate without the coöperation of the school.

The child of to-morrow begins life under different circumstances. She is sound of mind and body, and the training she receives is of such a kind as to fire her with interest in the great world of which her school world forms a part.

In the kindergarten year she is disciplined and socialized by contact with others. Through industry she approaches deftness and achieves concentration. She delights in the singing which vivifies everything from the pussy willow which she has found to the love binding the family together. She sings lustily, gaining a sense of rhythm; her perceptions of form and color are guided; while in the games she learns the important lesson of coöperation, she feels the zest of the contest, she knows the meaning of fair play,

and becomes a tiny law-abiding and law-loving citizen.

Froebel's three great principles of Unity, Continuity, and Self-activity have weathered the storm of sentimentality and have formed the framework and inspiration of the whole school structure.

At last little To-morrow is led from the kindergarten into another room where she is greeted by a smiling teacher and a group of happy girls and boys. The room is bright and homelike, pleasing in tone and decoration. At the windows are flowers, thriving in the pure air and even temperature.

To-morrow slips into one of the inviting chairs placed at the low, round tables, and joins in the singing. She is encouraged to choose a song — one that tells of the woods. Soon the children picture themselves camping in the forest. They are Indians in the time before the white man came. What should they eat? What could they wear? What would form their houses? They are guided to think out primal needs, to see how seed gathered from grasses is made into porridge, the fibre of plants woven into cloth, and how the branches of trees are bound together to form tents. In this

study they perceive the necessity for tools and the possible utilization of Nature's implements.

The next step is a dramatization of the scenes they have pictured. They plan the stage setting and the costumes, doing the work as far as possible themselves, thus using and enlarging their conception of form and color. In learning their parts they take up the good use of words with their relations to one another. Simultaneously they absorb their first lessons in history. By the time they have actually presented their little play these children of a complex world know what are the actual necessities of life; they see how human beings transform materials to suit their needs. Gradually they become familiar with the nature of materials used in every day life; textiles; wood, iron, tin, brass; the tools made from these; the processes evolved in their practical application; and the products resulting from all this interaction.

The children vie with each other in doing the school room caretaking, performing little duties in getting ready for the day's work, and in straightening up afterward. To-morrow is proud when she is allowed to

help set the tables upon which the luncheon cooked by the older girls is served. Later on at home she demonstrates her new accomplishment.

More than anything To-morrow enjoys the walks out of doors in the park surrounding the school, and the nature study, which continues through the cold weather in ample conservatories. Then there are the games, interesting games, from which To-morrow learns more than poor little Yesterday had ever been able to extract from books.

How the teacher of the old school would have scoffed at the new way! She used to complain that the children who came from the kindergarten wished to play all the time. Of course they did; it was the child nature striving to express itself. But the old educators thought, "These children must work in our way, they must fit into the system." Now the child is taught through her own natural impulses, the system being a result of the child's development.

Every teacher is a college graduate, the product of years of deep study of psychology and sociology. With but twelve to twenty children in her class she has time to consider the individual need with real insight and to

make of each well balanced group a working unit. She has formulated with the other teachers a definite plan for accomplishing the work allotted to that particular school; her own class has certain ground to cover, but to her is entrusted the method of reaching the desired end. There are no hard and fast lines to make monotonous the carrying out year after year of the underlying plan. The teacher is broad, original, human. She investigates the background of the pupils and if a child comes to school hungry and half clad, she finds out why. She knows the mothers of the poor and helps them to work out the home problems; she meets the mothers of the well-to-do children and enlists their assistance and interest in this uplifting work. At last the teacher, the physician, and the mother are working together.

A trained nurse coöperates with the school physician in doing preventive work; for the day of preventive treatment has come and the gymnasium depletes the hospital.

The cry of the old school system had been, "We cannot afford to have so many teachers nor can we afford to pay the salaries of experts." How strange, too, in that day

of mad specialization when the expert was demanded in every branch of national enterprise. Public opinion has found it a wiser economy to humanize education. The cost of more and better teachers is offset by honest administration. While To-morrow's dynamic power increases human wealth, Yesterday's static virtues but conserved it.

One day little To-morrow runs eagerly to the library to investigate the subject of fire, for she has now grown old enough to help cook the school luncheon, and fire is of course the first thing to consider. The librarian, who has been primed by the teacher, guides To-morrow in her choice of books so that she quickly becomes absorbed. She follows fire from the spark generated by the twirling stick or struck from flint and steel, on through the ages of progression to the present day. When she reaches school the next morning she is bursting with information. There is a general discussion in the class and the teacher illustrates the subject so far as possible with objects from the school museum to which the children from time to time contribute pieces of handiwork and collections of their own making. The class is led on step by

step from the history to the actual cooking, and around this subject as a nucleus the work of a certain period of the school year is grouped. Chemistry, physics, hygiene are taken up with this laboratory work; mathematics are built up from handling quantities, weights and measures; physical geography and the geography of locality are evolved from the study of food stuffs; English comes in the reading of stories relating to the central study and expressing the activities of various national interests; talks on the subjects become grammar lessons and these often terminate in the written theme.

Sometimes the class gives a little concert for the children in a hospital and there To-morrow's sympathies are aroused by a cripple for whom she determines to make a wrapper, sewing having now become the central idea of the school work. To-morrow plans the garment to be made and designs the trimming. From this starting point she is led on to an interest in making designs for various sorts of fabric and her fingers learn to be skilful. The work shops have become busy places.

Several rooms of the school have been fitted up as a model house and here the chil-

dren learn the principles of sanitation and housekeeping.

To-morrow returns home one day with the thrilling news that Mary Poor's baby has spent the morning at the school. She tells how the school nurse bathed, dressed and fed the baby, putting it to sleep in a little bed. She ends with the exclamation, "We are all going to take care of our babies just the same way!"

Ample time has come for such work with the elimination of routine and of useless book study. In small classes every moment counts, there is no waste. Each child progresses as fast as her development will permit, regardless of regular promotions. No grade lines suggest dropping out of school. In addition to this it becomes evident even to the poorest parent that the school has discovered what the girl can do best and is training her in the way of that aptitude, to the end of making her a more efficient wage earner and at the same time a more useful factor in the home.

When To-morrow is thirteen she has advanced from the elementary to the secondary school in which her work goes on without a break, except that at this point

she has to choose between a course leading to college and one that leads to the making of a livelihood. She is fortunately enabled to make college her aim, and as she knows from her work in the elementary school that her natural inclination is toward scientific study, the accent is placed upon science, though the course is broad and well rounded. Her physical welfare is considered first of all and she is often in the gymnasium, swimming in the pool, or taking part in competitive athletics. Her practical training in housekeeping continues in connection with chemistry, physics, and art work and she has made great headway in botany, zoölogy and geology. Her social instincts, which have been unfolding for many years, are broadened and deepened.

She has reached an age of confidence in herself and so she finds joy in being original. The opportunity is given her to face many problems at issue, perhaps first the "Servant question." She works out the proper training for the servant, the position she should occupy, she even practically demonstrates her theory by taking the part of a servant for a group of classmates. Again she studies the responsibility of the shop girl to the

employer, or, perhaps, the duties of one member of a family to the others.

She is required to take one modern language, besides English, and she may choose Latin or Greek, but only as a philological background. She looks to mathematics to interpret by its symbolisms the numerical values in her practical problems.

The whole school, girls and boys, rejoice in music. There are groups doing orchestral work, and there are great choruses. The popular taste is thus cultivated and individual genius is encouraged by the increased appreciation of the mass. The art work is a study of form for decoration, for better dress designs, for beautifying homes and gardens, for training ready illustrative ability as an aid to written language.

The majority of To-morrow's companions choose the preparation for earning a livelihood and are enabled by the school to go into some specific line of employment at the end of each year. Their interrupted education may be supplemented by night school courses leading to the diploma. In the day school they pursue work — physical, practical, scientific, literary, and social. When they go directly into business from the

secondary school they give increasing satisfaction because of their special training, general information, and because of their knowledge of workers' responsibilities. Marriage for them is probable, due to their associations, and successful by reason of their school training in service.

To-morrow's college life is one of enrichment and enlightenment. In addition to science and literature she takes economic, sociologic, psychologic studies; she does observation work and makes researches; she carries on the scientific investigation of common things. Time is allotted for practical work in organizing and conducting charities, in order to encourage and enlarge To-morrow's coöperative ideas and plans. That which is attained is not scholarship as such, but the merciful and just interpretation of human life.

Many vocations are open to the college girl — literary, scientific, and artistic work, secretarial, managerial, and professional. Her efficiency is great and her standard is high. Her opportunities for marriage are numerous but her choice is deferred because her interest in her work seems adequately to fill her life. When she does marry the success of the step

is assured by her ability to choose wisely, and by her liberal education, general culture, and because of her thoroughly disciplined mind and heart.

The girl who goes from college into social life finds a multiplicity of opportunities for influence and for philanthropic work. Her marriage is definitely characterized by the desire to serve, by fitness for companionship, and for the responsibilities of motherhood.

To-morrow chooses teaching as her vocation from a desire to impart and to direct the developing body and mind. Success is assured because of her broadened outlook on life and because of the quality of her personal experience, which inevitably leads her into the van of progressive movements. Her marriage is purposeful and successful, for in her the mating instinct has not been eradicated, neither has it been made the object of life. She is a wholesome, joyous, capable, sympathetic, helpful woman.

Yesterday and To-morrow, as affected by the school of the old order and of the new, vary essentially in the extent and depth of their influence as women in the home. Yesterday presided over her family

making it a little world of her own from which she viewed the passing of people and events as incidental to her life. To-morrow with her family as a social group lives in and for the larger world, feeling and understanding its throbbing interest from her stronghold of soul satisfaction in her immediate field of unselfish and constructive service. Yesterday appreciated the public need for the guiding help of capable women in its economic and social problems, but her absorbing household routine rarely allowed her to contribute herself or her thought to any active promotion of philanthropic work. To-morrow grows up with the industrial and social life of her day, has the view point of a responsible and responsive member of society, knows how so to economize her time and strength that she largely controls her home conditions, and can give her share of service to the advancement of general welfare. Society, school, and home — all are both beneficiaries and benefactors in this new order, because, by developing the potentialities of the school-girl's human endowment, they enable her to realize herself while she is yet on the road to womanhood.

Half Time at School and Half Time at Work

HALF TIME AT SCHOOL AND HALF TIME AT WORK

COÖPERATIVE EDUCATION, THE PLAN OF THE UNIVERSITY OF CINCINNATI, WHICH IS WORKING WITH THE INDUSTRIAL PLANTS, THE LIBRARIES, THE SCHOOLS, AND EVERY OTHER ACTIVE AGENCY TO SERVE ALL THE PEOPLE OF THE CITY

BY FRANK PARKER STOCKBRIDGE

A DOZEN or so clean-shaven young fellows working in a Union Pacific section gang one hot summer day in 1910 seemed to a curious observer so much more like trained athletes than they did like section hands that he was impelled to ask:

"Are you fellows working for the railroad, or are you in training for something?"

"Oh, this is our steady job," was the reply.

"Expect to stick to it long?"

"Only till college opens in the fall."

"Oh, I see — working your way through college?"

"Well, not exactly that. You see, we're from the University of Cincinnati and this

is part of our regular five-year course in engineering. We're 'coöp.'"

Among a score of big-muscled giants working on the molding floor of a Cincinnati foundry a lithe, determined-looking youth, tamping sand in a flask, attracted the attention of a visitor.

"Bright-looking fellow, that," he commented to the superintendent.

"He ought to be. He's one of the University students — a 'coöp,'" was the reply.

"Where's that bright apprentice who explained the working of this machine to me last week?" a customer asked the manager of a large Cincinnati machine-tool works.

"He isn't here this week — it's his week in college. You see, he's a 'coöp.'"

"What is a 'coöp?'" I asked Dr. Charles William Dabney, president of the University of Cincinnati. "What kind of a university is this, anyway, where your students spend their time in track-ballasting, in iron-molding, and in machine-tending?"

"Answering your last question first," replied President Dabney, "this is a different

kind of a university. It is the only municipal university in the world. We occupy the same relation to the city of Cincinnati that the great state universities do to their states. We are trying to make a people's university, just as the state universities are doing. But the state universities cannot solve our municipal educational problems. We are trying to solve them here, and the big problem we are working on is how to connect everything in Cincinnati with the University.

"We believe that every school should be a part of the body politic and not a separate thing. We have, therefore, established intimate relations with the public-school system, the libraries, the art museums, the hospitals, the charity organizations, the natural history museums and the zoological garden, the local colleges for training ministers, and, most important of all, with the business men and manufacturers of the city. We believe in training our students for the service of the city while they are still students. For this reason, we put them to work in the industries, in the University Settlement, in the hospitals, and in the public schools while they are still being educated."

I began to get a glimmer of what a "coöp"

might be. "Then you take these mechanical apprentices in as students?" I suggested.

"It's the other way about," replied Dr. Dabney. "The shops and the railroads take our students in as apprentices. But that is only one phase of the coöperative idea. Our whole ideal is 'Coöperation in Service'; that is, coöperation with all the existing institutions and agencies in the city in the service of all the people."

"And a 'coöp' is, ——" I began.

"A 'coöp,'" interrupted Dr. Dabney, "is a student in the coöperative course in our College of Engineering. That course has probably attracted more attention than any other that we have here because it is the first instance of coöperation for education between a university and the business of a city. All the great industries were demanding engineers of construction and all were declaring that the college was not producing them, even when an apprenticeship followed the college course. But the college could not provide great shops with up-to-the-minute machinery for the training of engineers, and it became evident that some sort of coöperation with the real shops was necessary.

"While we were working on this problem a young engineer dropped in with the answer. He was Herman Schneider, a graduate of Lehigh University, who had taught in his alma mater for several years and then had spent six years in steel construction work and railroad engineering. He had a plan for a new type of institution to train engineers. We told him to go ahead, and he did, working out all the details as he went along with a skill only possible for a man who knew both the college and the demands of industry. He is Dean of our College of Engineering now. He can tell you what they have there better than I can."

"We have the hardest-working group of college students in the world," said Dean Schneider, in answer to my question. "They are working eleven months in the year, ten or twelve hours a day, for a five years' course, half of the time in the hardest kind of manual labor, and the principal trouble we have is to keep them from over-working."

"You are developing a new type of college student then?" I suggested.

"The type has developed itself," replied Professor Schneider. "It is the result of a selective process in picking our students.

In 1906, the first year of the coöperative course, fifteen out of the sixty applicants dropped out as soon as they learned that they would have to soil their hands and get to work at seven o'clock in the morning. Only twenty-eight of the remaining forty-five stuck through the preliminary summer shop work which those who are enrolled have to do before entering the University in the fall. Now we have thousands of applicants every year and we pick only those who give the best evidence of willingness to work hard. We paint the shop end of the course in broad, black, sweaty strokes, and the boy who tackles the first summer's work after that is likely to have good stuff in him. If he hasn't, the shop will uncover a 'yellow streak' before the University suspects it."

"How do you keep the students in touch with both the University and the shops, and how does the University keep in touch with what the students are doing in the shops?" I asked.

"We group the students in each course, mechanical, electrical, civil, or metallurgical engineering in pairs," said Professor Schneider, "and while one of the pair is in the shop, the other is in the University attending

classes and doing laboratory work. The University course is repeated the next week for the students who were working the week before. Then I have a staff of assistant professors, whom we call 'coördinators,' who are college graduates acquainted with shop practice, who spend their mornings at the University and their afternoons in the shops. Their function is to make a direct weekly coördination of the theory of the University with the practice of the shops. Figuratively speaking, the coördinators take from the student apprentices the blinders which would restrict their vision except for the coördinator explanatory work."

"What has been the effect on the University?" I inquired.

"It has made us inquire into the efficiency of our teaching," said Professor Schneider. "It has caused a complete reorganization and reclassification of courses. We have a progressive crowd of students to keep up with. They come from their week in the shop vigorous and eager for the class-room and laboratory work. They want a reason for everything and they seek the practiced application of the academic theories. We are

learning as much about teaching as the students are about engineering."

President Dabney had expressed the same idea a little differently. "It is the best method I know," he said, "of pulling the teacher down out of the clouds and making him lay hold of the real facts of nature and of life. It makes the teacher of economics look into the actual conditions of labor when the boys whom he is teaching are working side by side with union men in the shops; and it makes the teacher of mechanical engineering keep up with the best shop practice of the day when his students are familiar with it in actual operation, and are asking questions out of their working experience. These students push their teachers harder than any students that I ever knew."

"How do the manufacturers take to the idea of college students for apprentices?" I asked Dean Schneider.

"They are eager to get them. When we finish our new building for the College of Engineering, which will give us more teaching and laboratory facilities, we shall have no trouble in placing in the shops many more than the 176 students whom we have now in the coöperative course. We have

applications literally by thousands from all over the world. I received one not long ago from the Gold Coast of Africa. We give the preference to Cincinnati students, but we have many boys from other places."

"Do the manufacturers pay the students for their work?"

"The student receives the same pay as any other apprentice — ten cents an hour — when he starts in the shop. That is increased every six months until, in the last semester of his course, the student is earning nineteen cents an hour. If he fails to make good in the shop, he loses his job, like any other apprentice, and this entails being dropped from the University. If he fails in his University work, he is dropped and loses his job in the shop. But if he makes good he can earn nearly $1,400 more than his University expenses during the five years of the course. And when the student is graduated he is ready to step into a position as a superintendent of workmen. Our civil engineering students who worked in a section gang on the Union Pacific last summer will go back there as section bosses next summer. In the machine shop we have had trouble keeping some of our students

in the University because of the tempting offers that have been made to them by manufacturers."

"What is going to be the ultimate effect of this coöperative system on technical education in general?" I hazarded.

"A radical change in much of the future instruction in engineering colleges will be one effect," he replied. "The term 'engineering college' is too restrictive. What we shall probably be, is a 'college of industrial science.' There is just as much natural science and just as much business science needed for building a piano as for building a dynamo. If a college of engineering were to place in its curriculum a course in piano building, a howl of derision would arise throughout the educational world. But, since our colleges are endowed for the benefit of the public and not to make life's pathway easier for the individual, it should be obvious that to meet the requirements of an industrial community the college of engineering must broaden into a college of industrial science. The need for this has been brought forcibly to us by manufacturers in the so-called minor industries, who have proven to us the great dearth of well-trained men for their work.

"Another and bigger development will be the growth, by the side of the College of Industrial Science, of an Institute of Industrial Research, to which the superintendent of a shop may take his problem and work side by side with a good research man at its solution. If coöperative courses are started at other institutions, as promises to be the case, they will inevitably become colleges of industrial science, with an institute for industrial research attached. It is obvious that these institutes should be under one central management, so that several of them would not be working on the same problem. There should be a central office and library, to which all problems should first be submitted. Here the available knowledge relating to the problem would be collated and the best research mind and the best laboratory to handle it would be selected. With the influence of such a central bureau the use of a full-sized commercial plant could be obtained if necessary for an actual full-sized experiment. This would mean a National Institute of Industrial Research at the minimum cost. It would result ultimately in an institute for industrial research close to every manufacturing

centre, with the best brains of the country available for every local problem. As planned at Cincinnati, the coöperative students in their later years would assist research men in problems closely allied to their particular work."

This industrial coöperation is only one of the points at which the University comes into contact with the daily life of the people of Cincinnati. There is coöperation between the University's College of Medicine and the hospitals of the city. All the medical and surgical work in seven of the largest hospitals is done by the professors of the college. There is coöperation between the University and the city's charities and philanthropies. There is direct coöperation with the people through the external courses in the branch libraries and public school buildings, for which full University credit is given. There is coöperation between the University and the city bureaus in the testing of materials, machinery, and methods for doing various municipal work. And there is coöperation between the University and the public schools through the College for Teachers.

In the College for Teachers the coöpera-

tion with the Superintendent and Board of Education consists not merely in educating new teachers but in improving the old teachers and in supplying expert advice for all kinds of betterment in the city schools. In 1910, 565 of the 1100 public-school teachers of Cincinnati were taking some course in the University. The University professor of secondary education is inspector for the Superintendent of Schools on high-school teaching and he examines the teachers for the city high schools. The professor of elementary education renders similar administrative service. Every public school in the city is an adjunct to the College for Teachers and its students are trained in these schools.

"This coöperation with the school system is really the most fundamentally important thing we are doing," declared President Dabney, "so far as all the people of Cincinnati are concerned."

Inspired by the success of the coöperative idea in the work of the University, the people of Cincinnati have extended it to the public-school system. The first step in this direction was the establishment, in 1909, of the Continuation School for machine-shop ap-

prentices, the first of its kind in America. The experiment has proved so successful that continuation schools for other classes of young workers are being started, and, under the enthusiastic direction of Dr. Franklin B. Dyer, Superintendent of Schools, the whole school system is being brought into coöperative touch with the city's activities.

One of the big factories had been maintaining a school for apprentices at its own expense. It agreed to turn over its school plant and its instructor, Mr. J. Howard Renshaw, to the public-school service, and in September, 1909, the first Continuation School for mechanics was opened in a rented room. Eighteen manufacturers agreed to send their apprentices for four hours a week (and later increased the time to a full day), paying the boys for their time. Two hundred pupils were enrolled when the school opened. There are three times that many now. With a school equipment consisting of a number of sets of blue-prints and a stack of machinery catalogues, Mr. Renshaw set to work to put his students, some high-school graduates, some wholly uneducated, through a four years' course.

The blue-prints served as textbooks for teaching the scholars to read drawings; the catalogues served every other text-book purpose. Shop spelling was mastered from them; the "parts lists" not only provided exercises in reading and spelling but gave the apprentices new ideas of the work they were doing in the shops, where boys may tend machines for years without gaining any conception of the purpose of the article which they are manufacturing. In mathematics, ingenious methods of instructing the boys and at the same time interesting them have been devised. Addition of common fractions occurs as an exercise with a scale and the thumbnail; multiplication of fractions is accomplished with the layout of a machine drive in which the number of teeth in the gears are used for the numerators and denominators. Decimals are taught by working out theoretical shop payrolls. The geography of iron and coal, something of the science of steel, and some popular natural philosophy have been found to be assimilated quite readily. Mr. Renshaw and his assistants spend two half-days in the shops every week, keeping in practical touch with what the apprentices are doing and thus

coördinating the work of the Continuation School to that of the factories.

"It is an intellectual plunge-bath once a week for the boys," said Superintendent Dyer. "They come into frequent and vital contact with a teacher who is a live wire — a man who knows their troubles and their possibilities and who is the best man in all the city to awaken their powers. They become awakened, interested, quickened into new ambition — probably forever different in their attitude toward their work. We hear about the conservation of our national resources. What we are attempting is the conservation of our greatest national asset, the young workman."

So well has this first Continuation School served the purpose for which it was established that the Cincinnati Board of Education has offered to open similar schools for apprentices in any other industries whose employers will send them, and has obtained from the Ohio legislature a law making attendance in such schools compulsory for all boys and girls under sixteen.

As it brings the University, so the coöperative idea brings the public-school system of Cincinnati into touch with the life of the

city at many other points. There is coöperation with the Odontological Society, resulting in a free dental clinic in one of the school buildings; coöperation with the Anti-Tuberculosis League in its educational work; coöperation with the public library, and cooperation with the people through the use of the school buildings for mothers' clubs, for improvement associations, and for neighborhood societies. And the field of coöperation is constantly being extended.

What the citizens of Cincinnati think of the coöperative idea is best told by the manufacturers who have had the best opportunity to judge of its value. I questioned many of the 32 concerns that are coöperating with the University in its engineering course and many of the 21 establishments whose apprentices attend the Continuation School, and with hardly an exception they were loud in their praises of the idea and of its practical working.

"We have had occasion to employ a number of young graduates in mechanical engineering from institutions giving the usual four years' course," said Frederick A. Geier, president of the Cincinnati Milling Machine Company. "We now have twenty of the

coöperative students taking the mechanical engineering course in the University. Judging from our own experience, we feel certain that the graduates from the University of Cincinnati will prove far more useful to us than the average student that comes to us from the other schools. The Cincinnati boys have as much theoretical training as they would get elsewhere, and they are also in touch with the practical and commercial side of the business. We have about forty apprentices attending the Continuation School and we have noticed a decided improvement in the efficiency of these boys. The value of the Continuation School has been so evident that the men requested a class to be formed for them. This class is in operation, and now the foremen of the shops have asked for a class devoted to their interests. I believe that the time has come when attendance at continuation schools should be made compulsory through the youth's apprenticeship."

"The coöperative engineering course is a most pronounced success; so much so that this company has requested several of the students to give us the first opportunity for their services when the course is over,"

said Mr. William Lodge, president of the Lodge & Shipley Company, a veteran of the machine-tool industry. "We have eighteen students from our establishment in the Continuation School for machine-shop apprentices, and the foremen, the superintendent, and myself are delighted with the results so far."

"We have in our works from twenty to thirty young men who attend the Continuation School one half-day a week. We also have six young men who attend the University of Cincinnati every alternate week," said Mr. J. B. Doan, general manager of the American Tool Works Company. "We consider both plans a thorough success, and it is our belief that the Continuation School will develop young men into better workmen, to occupy positions as foremen and as superintendents, while the University course will develop them for the higher branches of engineering."

"The boys who are taking the coöperative course in the University and the boys who are attending the Continuation School are forging their way upward through the shop organization at a much more rapid pace than are their less ambitious co-em-

ployees," said Mr. F. E. LeBlond of the R. K. LeBlond Machine Tool Company.

So the testimony runs. Throughout the city the enthusiasm inspired by President Dabney, Dean Schneider, Dr. Dyer, and Mr. Renshaw is spreading. The people are alive to the new educational possibilities which these coöperative experiments have opened to the imagination. A new interest in education has been developed, and, as one observer puts it, "Cincinnati is becoming one big schoolhouse." The fame of the co-operative idea is traveling. Other engineering colleges are preparing to follow the example of the University, and other cities are adopting the Continuation School plan. The citizens of Cincinnati are again quoting with pride the comment of Charles Dickens, written seventy years ago:

"Cincinnati is honorably famous for its free schools, of which it has so many that no person's child among its population can, by any possibility, want the means of education."

How to Choose a Public-School Teacher

HOW TO CHOOSE A PUBLIC-SCHOOL TEACHER

BY WILLIAM McANDREW

(PRINCIPAL OF THE WASHINGTON IRVING HIGH SCHOOL, NEW YORK CITY)

If you want to choose *a man*, you will need to make haste — for the annual reports of the Commissioner of Education show that the *pedagogicus masculinus* is disappearing so rapidly that it will soon be extinct.

If you seek a female teacher, choose an Irish girl. This kind stands the strain best. If it had not been for the light-heartedness of the Irish race its own heavy history would have killed it. These merry young women, in spite of the excessive formalism and system that have encrusted American education, are the best able to keep the bright side of schooling turned upward. An Irish teacher can't be imposed upon. Forty boys sometimes get the devil into each one of them, all at once. The rules nowadays prevent you from driving him out by muscle. The Irish girl laughs at him. If any boy takes a

mean advantage of her, she can launch an outburst of sarcasm, invective, and correction in perfect taste — and in a few moments you will hear the whole company, teacher and children, laughing together. Your typical New England woman, with her ingrowing conscience, would be resentful all the rest of the day. The Irish teacher counts more on affection than on system. That's what makes her children learn faster, for teaching originated in a mother's love for children. The instinctive, primordial, atavistic love-essence in teaching seems to beat scientific pedagogy every time. If a lad likes his teacher, he'll like whatever she proposes — geography or penmanship.

Example of Irish affection: One day I heard a great noise in the street. It was a day of the first snowfall — one of those soft, packable snows such as just naturally forms itself into balls. A big, puffing policeman dragged into the school office a boy who had dented the officer's helmet and dignity. The Preserver of the Peace demanded that I send for the lad's parents or the youngster would be haled to the station-house. Some one told the Duffy girl (of the 6-B) that one

of her flock was held by the enemy. In she came with flashing eyes.

"What are you doing with my boy?" she demanded. "Give him to me!" Then we had a pretty tableau, my lady with one arm around a sobbing youngster's neck and the other hand extended defiantly at the tyranny of the law.

"I know you, Flannagan! You strut around the post like a walking target. Everybody itches to heave something at you. Now you get out of here, and don't you dare to touch a boy of mine again!"

Then he laughed and she laughed — and that's the kind of Irish spirit that keeps the systematic educators from killing the schools entirely. A teacher needs plenty of warmth to keep the blood from freezing and plenty of humor to cool it with.

The State Superintendent of Michigan schools said that you must choose pretty women for teachers. The legislature thereupon added three thousand dollars to his yearly salary. Everybody has been urging that the school-rooms be beautified. Good! What more lovely school-room decoration is there than a handsome woman? Beauty is a radiant thing; it soothes, heals, inspires.

The vision of a lovely face lingers in the memory like a song, like perfume, like witchery. You can shut your eyes now and see that fresh, handsome girl they put in charge of your class in the home town back in 1871. Her skin was clear, pink, and white, and preached health and the next to godliness. Her eyes were so bright, so kindly, so deep, and so pure that instinctively you knew what kind of a soul they were the windows of. By some natural telegraphy this girl's looks signalled to everybody that her instincts, her hopes, and her affections were healthy, hearty, and true. They brought the conviction into your heart that you were going to be a good boy.

It's a sort of fool thing to choose for a companion to children a dowdy, sour-faced female because she says, "Along those lines," and "you may pass," and "on the part of the pu-pill." It's rather unintelligent to make impressionable children serve five hours a day for a whole year in front of an ugly woman who neglects her diet and her exercise, who doesn't use her mirror or understand the beauty of a smile. What is the use of having children recite about the grand effects produced by the ancient Greeks

in setting up marvelously beautiful statues when the lady listening to this has neglected walking and dressing to the extent that no blood supply or modiste is preserving the æsthetic lines of her figure? What's the use of having drawing lessons in color and form and ornament if the teacher wears a shirtwaist like a crumpled paper bag?

There must be a logical basis for that Michigan superintendent's contention. The emotions mould the muscles. Your noble-minded woman has a noble carriage. Her attractive gowning is the outward expression of her respect for her person, the temple of her soul. The eyes and mouth and nostrils are shaped by the smile or frown, by the winsome voice or the snarl. I never knew a good teacher who was not good looking. I never knew a good teacher who did not become a better one as soon as she paid more attention to beauty. Teaching and "prinking" have this in common — that they are both for the benefit of some one else. The better she looks, the happier she is — the more able to radiate interest and inspiration — all of which, the wise ones say, make the active impulse of the teaching art.

The next particular to observe is whether

she talks much or moderately. In colleges they try to teach by lecturing. This error has seeped down into all grades of education, so that a large number of teachers talk so much that they prevent their children from being educated, that is — to speak literally — from being *drawn out*. If the candidate shows evidence of saying a thing only once and then of listening, engage her.

Lastly, find out where she is teaching. Go and test her children to see whether they have learned anything. Don't rely on any official record about a teacher. Not one report in a thousand is made after any testing of the work that she has done. You choose every other kind of worker on the basis of the results of performance. But no one keeps "the batting average" of a teacher; no one records what her pupils can do. The most that the official record will show regarding a teacher is that she ought to be able to teach. Whether her children are taught or not — only a test of the children can show that.

Albany Vocational Schools

ALBANY VOCATIONAL SCHOOLS

BY FRANK L. GLYNN

ALBANY, N. Y., has the distinction of making the first uncompromising and successful attempt to relate the public school directly with the working world — the world of production.

It is a novel sight which greets one on entering this new sort of institution. You may see the timekeeper reading his time-board, hear the clank of the anvil, or see a little girl hardly in her teens fitting a dress on another for whom she is making it.

First you enter the shop, where a mechanic is teaching the secrets of the trade which it took him nearly twenty years to master; you see one boy who has so many hours to serve as tool-clerk in the tool-room; another, as timekeeper; another, as stock-keeper; while another is foreman. The rest of the twenty boys are working industriously at their benches.

Here the work consists generally of wood-working. In many cases last year students took orders from the people of the city. The customer would leave the specifications of the product desired and the student would design it, make his blue-print and bring both the design and illustration, which he had also drawn, to the customer for acceptance. With these were the full estimates of costs, materials, labor, etc. The boy, you see, really did the work and really earned the money for it. There are a number of boys of fifteen who are earning nearly two dollars a week while going to school. Sometimes a boy is found who has developed into a youthful contractor and has such an amount of work on hand that he finds it necessary to employ several others as workmen for him at the rate of six cents per hour.

Related with the shopwork and running along hand in hand with it is the designing or drafting department, where an experienced draftsman teaches the student how to design the products and make blue-prints of the drawings. Here each boy is fitted with a complete drawing outfit and is taught from the viewpoint of a trade draftsman for one

hour each day; facts and theories supplement the two hours spent daily in the shop.

This constitutes the work of one half-day. The rest of the time is devoted to regular school studies — "readin', 'ritin', and 'rithmetic" — but all with special reference and application to the industrial activities.

The mathematics, which is ordinarily called arithmetic, goes by the name in this new institution of "shop-mathematics," for everything that is done in this department must have special reference to the shop work or drafting. It includes the principles of arithmetic with some algebra and geometry as is necessitated by the technical applications.

In following this class to the English room, we find them anxious and impatient to describe what has occurred in the shop production, to discuss shop ethics, and to study about the lives of such men as Maydole, Disston, Ezra Cornell, and other leaders of industrial production.

Their academic work is further extended by a study of industrial, social, and political history of the United States; they trace, by means of geography, the production,

transportation, distribution and consumption of the products used in the school and the city; from civil government, where they discover deviations from the well-trodden path of tradition. They begin their lessons in government with a study of the ward in which they live, of the alderman who represents it, and they trace, in a constructive and formative way, city, county, state and national government.

At this time during your visit you ask: "Well, what provision is made for the girls? Do they also make things in the shop, saw wood, etc.?"

"No, they do not," is the reply, and you look relieved.

"What is the nature of their work then?" you inquire, and the reply is the opening of the sewing-room door, where you see a number of little ladies happy amidst a profusion of sewing machines, tapes, needles, thimbles, cutting tables, and lingerie of various sorts and kinds.

The students perhaps take turns showing you about. One little girl is stencilling a curtain — an order left by a visitor from Bridgeport, Conn. You inquire what she is making. She looks up with a smile, opens

her table drawer and brings forth a sheet on which she first had to figure her estimated cost, before remitting her "quotations" to the buyer.

"Yes," is the answer to your question, "this is part of the arithmetic for the girls."

You find on looking over the sheet that she has been requested to submit samples and quotations on several designs.

You note with interest:

Poppy design No. 1.				
Designing				
No. of hours	3			
Pay per hour		$.25		
Cost of labor			$ .75	
Selling price				$ .25
Applying design				
No. of hours	6			
Pay per hour		.20		
Cost of labor			1.20	
Selling price				1.20
Goods				
Cost			1.00	
Selling price				1.10
Paints				
Cost			.40	
Selling price				.40
Hemming—plain				
No. of hours	4			
Pay per hour		.07		
Cost of labor			.28	
Selling price				.28
Quotation—$4 prepaid				
				$3.23

She explains that the selling of the designing at a lower cost than estimated was

due to the fact that the customer permitted her to use the same design over for other orders, so that she figured that it would take three orders to pay her for the effort. The difference in the selling price and the actual cost is due to the expressage which she found by going to the express office.

As you pass on, you find one girl working on an order for baby clothing which was left by a woman in the city; another is doing nurses' aprons; still another is making overalls for her father. Now you see a little lass arise and hold a small skirt up to her waist before the mirror, and here is a small Italian girl, Sophie, who looks up and greets you in a most maturely childish manner. Yes, to be sure she likes the school, for has she not given up a job in a factory where she earned the enormous sum of two dollars and a half a week — coining, as you truly think, her young life's blood and happiness of childhood into a pittance of base metal for the squandering hand of a shiftless father. Your sympathy is touched and your interest awakened so that you tarry a moment longer.

"And what are you making?" you ask.

"Well," she replies, "you see, we are quite poor and I have five little sisters younger

than myself. I have to take care of them at home even though I am not working, and so while in school I make their clothes."

The next stop is in the kitchen. Here two dozen little maids clad in white caps and aprons are engaged in preparing the noonday lunch for the school. One little lady is hustling about all over the place, which is arranged as a real city flat. Now she talks with this one, now with that, and now with another. You wonder at the freedom, the responsibility, and the apparent lack of discipline; were you to come here at the same hour each day, you would find the same orderly disorder. Kind visitor, you are beginning to see that this is not a school of "those good old days" — ask as many questions as you like.

One pretty little maid looks up encouragingly with a welcoming smile and you go over to see what she is doing. She proudly replies, "I'm working on an order for bread that must be sent out this noon for dinner." You feel the weight of her responsibility and pass on to find another earning some money baking a cake to fill another order.

Then you come to the wash tub where a little one is rubbing and rubbing away at

some large piece of wearing apparel. You stop to look at her and on inquiring find that she is "washing coffee stains out of mother's new dress." Your attention is now attracted by another little miss stirring a five-gallon mixture; at this moment the first little girl you noticed on your entering goes up to the stove, speaks a word or two in an undertone to the little mixer, who puts away her spoon and draws the kettle to the back of the stove, after which she opens the luncheon counter and begins to place the dishes out. Inquiry again informs you that the first little lady who is so busy directing others, passing about from one place to another, making notes and calculations, measuring this and testing that, is a most important personage. She, in a very responsible and dignified manner, informs you that she must have "things right or they won't sell" — pointing to a bulletin-board on which you read:

MENU

Cream of tomato soup — 2c
Orange and banana salad — 2c
Boston baked beans — 2c Boston brown bread — 2c
Ham sandwiches — 2c Plain bread sandwiches — 1c
Cocoa — 2c Coffee — 2c Milk — 1c
Oranges — 2c Bananas — 1c

"Did you say that you have charge of this?" you ask.

"Yes, indeed," she replies and looks around in a preoccupied manner.

"Well," you ask again, "does not your teacher plan it for you?"

You have touched the spark that ignites the fuse.

"No," she replies, "the teacher will not tell us a thing unless we are making a mistake. We have to do all the planning, marketing, and distributing to the other girls who do the cooking. Then," she continues after replying to a question from one of her subordinates, "I have to report to the cashier so that she can figure out her accounts and know how much to charge for the various articles."

You again venture a query, "And what position do you hold, if I may ask."

Smiling at your apologetic manner, she continues, "Why, I'm the assistant cashier. Next week I'll be the cashier and another girl will have my position." Then, begging your pardon, she hastens off to where she has just been summoned to look after the taking of the brown bread and the baked beans from the oven.

Just as you are about to leave, another pleasant child comes up to you and invites

you to remain to luncheon. After that, you go downstairs, where you find the cashier at the teacher's desk making out her report for the day; the afternoon session of school has begun. You venture another inquiry and find that she is making a report that goes to the arithmetic teacher so as to provide the girls' classes with arithmetic for the next day's lesson. Then she further explains with a troubled brow that she is having quite a time to-day, as her "cash will not balance." You see that she is surrounded with lunch tickets and small change taken at the daily luncheon sale. She tells you how much she has sold, how many tickets she has, how much flour, butter, sugar, etc., was reported to her as used that day, what the market prices are, what her receipts are, and then, showing you her report card, asks you, with a sad tone in her voice, "And how would you like to figure all that out?"

"What becomes of the money you take in?" you ask.

"We have to deposit that in the city bank," and she adds with a business-like manner, "at the end of each month we have to make out a check to the Board of Educa-

tion showing how much of the cost of our department we have covered." Before I left her she told me that the Domestic Science Department had entertained Mayor McEwen and the Board of Education at luncheon not long since.

This type of school work has been in existence for some time in private and philanthropic institutions; never before has it been part of a public-school system. Any boy or girl who has completed the sixth year of the elementary work may be appointed to this new school. At present the school is filled, and as many children still wished to enter, the Board of Education opened a new school in another section of the city, which also is now full. It is the purpose of the city to so extend this vocational work, in which the student has an opportunity to "find himself," so that two years of additional training along the line of the chosen vocation may be offered.

The initiative in this new movement in education was taken nearly three years ago by Commissioner Andrew S. Draper. Through his efforts the legislature of the state of New York made provision for assisting cities to maintain these schools.

The development of the work since then has been due in great part to Arthur D. Dean, Chief of the Division of Trades Schools. He has been endeavoring to solve the problem of developing a system of education, with a new and original theory of philosophy and pedagogy, which will offset such special training as will fit 800,000 boys and girls to enter industrial and commercial vocations. His ideal is to offer "such courses of instruction in the public school system that any man or woman, boy or girl, may, at any time, receive training in any vocation."

It is of interest to business men, who deal with figures and percentages, that of those beginning the work of the Vocational School more than 80 per cent. of the original students intended to leave school as soon as they were fourteen years of age. At the end of the first year only 5 per cent. had done so. At the end of the second year, corresponding to the eighth year of school life, more than 50 per cent. of those promoted to High School standing returned for third-year work — a problem which the Board of Estimate is at present facing.

Letters have been received from contractors and manufacturers about those boys who have thus far been placed with them. One man states that a boy did as well in the beginning of his work as another apprentice of from one to two years' standing who had not had this training. A quotation from another man in charge of a large apprentice system nearby explains itself:

". . . The average boy who comes to us is 'green' and months pass before we have him in proper condition to hold 'his own' with the other apprentices. With your boys the awkwardness and shyness had been eliminated and they 'made good' at the start, which is a big item at a plant of this size, where the production is on a piece-work basis."

The present status of this work in the state as passed upon by the Regents University of the State of New York, November last, is endorsed to such extent as to give advanced standing to those who wish to enter the High School. To students who complete the vocational course of two years a junior trade-school diploma will be awarded; to those who complete a four years' vocational course a senior trade-school diploma will be given;

and those who wish to continue two years longer may have courses of liberalized trade training and of highly specialized mathematics and science. It will not be the fault of the schools if their graduates are not fitted for unlimited promotion.

During the early development of the work much interest was aroused concerning the attitude of organized labor. Thomas D. Fitzgerald, local representative of the Executive Council of the New York Federation of Labor, became greatly interested in the progress of the work and much is due him for his hearty support and encouragement. Through his efforts an official investigation of the institution was made in December, 1910, by the Executive Council during its executive session in the city. The members spent an entire afternoon inspecting the workings of the various departments, after which they endorsed the work most highly as the only possible way of replacing the old apprenticeship system.

We have all seen the rapid strides made in the conservation of materials and time, in the development of by-products, which resulted in an increased efficiency of machin-

ery, until now the captains of industry are turning their attention to the "increased efficiency of the workman" — which is possible only through special education.

At present a boy may leave school at the age of fourteen, but he cannot obtain employment in gainful occupations until he is sixteen. During these two years he is adrift on the community; he forgets what little he has learned, and becomes, when he is old enough, an unthinking "attaché" of a machine; he is an "operator" without even the rudiments of the training necessary for the skilled workman of to-day. Consequently, his opportunity for advancement is barred and he is inefficient for due promotion.

The purpose of this form of education is to offer an opportunity to the "masses" that will alleviate just such conditions, which are on the eve of creating social havoc among us. Let us give the boy and girl their rights and provide them with such a heritage of opportunity in education as it is possible for this generation to bestow upon posterity.

Only a few years ago we saw the establishment of the kindergarten, which provided an easier transition for the child "from the

home to the school." Is it not as much the duty of the state, the community, and the school so to direct their energies as to return that child "from the school to the home" in such condition that he will be an efficient asset to home support, a real producer in the community, and consequently a morally and economically valuable citizen?

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